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World News

'No austerity' pledge after Portuguese elections

Portuguese were assured by *their* prime minister, Anibal Cavaco Silva, that they would continue to enjoy one of Europe's highest economic growth rates. There would be no austerity, he said, in a speech celebrating the resounding victory in Sunday's general election of his Social Democratic party (PSD).

He warned, however, of "great challenges" caused by international uncertainties and developments in Europe, but was confident of overcoming any difficulties. Page 20

Kurds flee for Iran
Thousands of Kurds were reported to be fleeing towards Iran after the most serious clashes in northern Iraq since allied forces protecting the Kurds withdrew from Iraqi territory in July. Page 20

Shamir holds hard line
Prospective Middle East peace talks will fail if the key Arab demand that Israel relinquish occupied territory is made the main focus of negotiations, Israeli prime minister Yitzhak Shamir said. Page 4

Iran-Contra charges
The Iran-Contra special prosecutor brought two criminal charges against former US assistant secretary of state Elliott Abrams, alleging he withheld information from Congress. Page 7

Impeachment fails
An attempt to impeach Sri Lankan president Ranasinghe Premadasa for abusing his powers and violating the constitution failed. Page 6

ANC eases stance
South African anti-apartheid organisations decided to call for the immediate lifting of sports, cultural, academic and travel sanctions against Pretoria, though economic sanctions should be maintained. Page 6

Belgian poll date
The Belgian prime minister, Wilfried Martens, tipped November 24 as the date for general elections. King Baudouin refused on Sunday to accept his offer to resign immediately in a political crisis. Page 3

Haiti crisis deepens
The political crisis in Haiti deepened when the country's parliament rejected proposals for the reinstatement of President Jean-Bertrand Aristide, overthrown in a coup d'etat last week. Page 7

Diplomat shot dead
A Turkish diplomat was shot dead in a residential district of Athens in an attack bearing the hallmarks of November 17, a leftwing Greek terrorist group. Page 3

Maguire extradited
IRA suspect Donna Maguire was extradited from the Netherlands to Germany where she is wanted for questioning over the murder of a British soldier in Hanover in 1989. She was cleared in July by a Dutch court of involvement in the killings of two Australian tourists in Roermond.

Refugees turned back
Hungary, facing a rising tide of refugees, has turned back 46,000 foreigners from 27 countries from its frontiers since tightening border controls last Friday.

Pilots killed
Two Spanish air force officers were killed when their F-5 Phantom fighter-bomber crashed after a training flight in western Spain.

Nobel winners
German cell physiologists Erwin Neher and Bert Sakmann won the 1991 Nobel Prize in physiology for their discoveries concerning the function of single ion channels in cells.

Business Summary

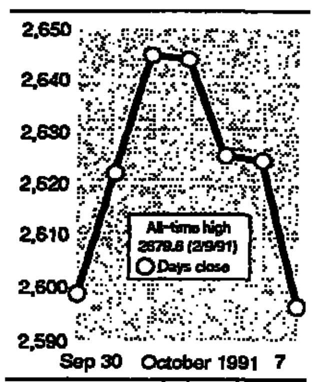
Eurotunnel to postpone dividend as costs rise

Eurotunnel, operator of the Channel tunnel currently under construction, said the first dividend to shareholders was likely to be put back to the year 2000, 12 months after expected.

Costs of building the tunnel have risen to more than £8bn ($13.8bn) by £446m because of safety requirements and a fall in estimated initial traffic. Page 21; Lex, Page 20

UK EQUITIES: shares fell sharply in thin turnover as London joined the general retreat in European stock markets which followed Wall Street's sudden downturn. The FT-SE Index, down 30 points at the day's low, lost the 2,600 level recaptured only a week ago in spite of light selling in the UK market. Page 31

FT-SE 100 Index



AMERICAN Telephone & Telegraph, US telecommunications group, plans to increase the proportion of its business outside the US to 50 per cent by the year 2000. Page 21

WHYTE & Mackay, drinks subsidiary of American Brands, the US tobacco group, was given permission by Peter Lilley, UK trade and industry secretary, for its £286m ($498m) hostile bid for Invergordon Distillers, UK Scotch whisky group. Page 28; Lex, Page 20

TRADE: US and India came closer to solving a dispute over intellectual property rights that has threatened to prompt retaliatory US action. Page 8

STEEL: economic turmoil in the Soviet Union and eastern Europe could mean a 17 per cent drop in steel consumption there this year. Page 8; A poor guest at the party, Page 18

TRADE: Japanese trade insurance premiums are likely to rise 30 per cent to cover growing losses suffered by companies in contracts with less developed countries. Page 8

WALL STREET: all the 18 Wall Street securities houses and banks, disciplined last week by a US federal government securities agency for inflating orders and falsifying information on its debt securities, have agreed to pay fines totalling about $1m. Page 26

KUWAIT: US and Canadian teams have made spectacular progress in capping blazing oil wells, while the Kuwait British Group has not yet begun projects due to start this month. Page 20

COMPANY PROFITS: stockmarket analysts have revised down their 1991 profits forecasts for companies in the seven major economies, according to a survey carried out at the end of September. Page 26

S AFRICA: companies such as Lonrho, Shell, BP, GEC, ICI, BTR, RTZ and Trafalgar House are still likely to be avoided by individual and institutional ethical investors because of their S African interests, according to Ethical Investment Research Service EIRIS. Page 26

PEUGEOT, France's biggest car group, saw a 54 per cent year on year fall in first-half net profits to FFr2.27bn ($390m), after a steep decline in demand in France, Britain and Spain. Page 21

Yugoslav president and Croatian leaders narrowly escape death

Army aircraft bomb Zagreb

THE YUGOSLAV armed forces yesterday took their war against Croatia to the heart of the capital Zagreb with a precision rocket attack on the presidential palace. President Franjo Tudjman narrowly escaped death.

Mr Tudjman, Mr Stipe Mesic, a Croat who holds the rotating Yugoslav presidency, and Mr Ante Markovic, Yugoslav prime minister, were in Banski Dvor, the president's headquarters, when an air force jet fired a rocket directly into the inner courtyard at 3.05pm. The country's top three Croats were therefore involved in the incident.

No one was hurt, but the rocket, which was followed by three others, shattered the building and nearby residential homes. The blast was heard across the city.

Mr Markovic accused General Veljko Kadijevic, defence minister, of attempted murder and demanded his resignation. The three escaped death only by a miracle, he said.

The afternoon raid took place just hours after General Andrija Raseta, deputy commander of the fifth military district which includes Zagreb, threatened to bomb the city if the Croatian government failed to lift blockades on federal army barracks throughout the republic.

An hour later, at precisely noon, with tension in the city rising rapidly, Mr Tudjman told a packed news conference that the people of Croatia would defend the republic against "the aggression of the federal army and Serbia".

He said the blockade of the barracks would not be lifted and that Croats needed the weapons held by the besieged military. He appealed for the despatch of the US Sixth Fleet, together with a force organised under the Western European Union, and more European Community monitors, "to halt the aggression".

Smoke billows above the presidential palace in Zagreb after an air attack by the Federal army yesterday

"I was standing just 10 yards from the presidential palace," said Mr Davor Hrener, a 21-year-old police officer. "I heard the plane. I saw it coming. I think they dropped four rockets. I flung myself on the ground. When I looked up, I saw Tudjman coming out. He was rushed away."

Mrs Sofia Prtljacic, a 70-year-old pensioner, was in her small house, just around the corner from Mr Tudjman's office.

All her windows were smashed and the rooms were full of rubble. In the adjoining courtyard was the wrecked car of Mr Mario Nobilo, Mr Tudjman's adviser.

"There was a lot of smoke," said Mrs Prtljacic. "I thought the place was going to go up in flames. But thank God, it did not."

On Radicev Square, where the presidential palace is situated, young Croatian National guardsmen stood in stunned silence around the wreckage.

The blast of the rockets had flung the heavy, oak double doors which open into Mr Tudjman's inner courtyard across the square. Glass and the broken orange tiles which adorn most of the city's roofs were strewn everywhere.

An attack on Zagreb seemed unthinkable a week ago. Last night barricades had been thrown up throughout and around the city to prevent tanks from rolling in.

Hours after the attack, Zagreb was plunged into darkness as air-raids continued to sound almost hourly. The sound of army bombardments could be heard, fuelling fears that the federal army could attack the large Marshall Tito barracks in the capital. Part of the road to Karlovac, south of the capital, is now mined. Classes in Zagreb's schools and university have been suspended.

Croatia to seek EC recognition today, Page 20

Brussels attacked over merger policy

By **Andrew Hill** in Luxembourg, **William Dawkins** in Paris and **David Gardner** in Brussels

FRANCE and Italy – incensed by last week's European Commission decision to block a Franco-Italian takeover of de Havilland, the Canadian aircraft manufacturer – yesterday called for the revision of Brussels' year-old merger regulations.

The Commission vetoed the de Havilland deal on competition grounds, in accordance with the merger rules, but the French and Italian transport ministers said such decisions undermined European Community industrial policy.

The French government and Aérospatiale, the French bidder for de Havilland, are putting unprecedented pressure on the Commission to re-examine its decision. Brussels insists that any appeal should be made through the European Court of Justice, a move the French see as long-winded.

At the weekend, Mr Roland Dumas, French foreign minister, complained to his EC counterparts about the move, and the French and Italians interrupted yesterday's meeting of EC transport ministers to air their objections.

Aérospatiale officials said that the French company and Alenia, its Italian partner, might draw up a new offer for the aircraft maker in an attempt to satisfy the Commission's anti-trust objections. It was too early to give details on any proposed compromise.

However, officials in Brussels doubted that Aérospatiale could come up with new proposals on de Havilland which could dilute the impact of the quasi-monopoly which would result from such a merger.

Mr Paul Quiles, French transport minister, said in Luxembourg yesterday: "It seems to me imperative that the Commission should not content itself with looking at competition [criteria]. It's not enough."

Mr Quiles said that on those criteria alone, Sir Leon Brittan, the competition commissioner, would also have recommended blocking the formation of the successful Airbus manufacturing consortium, set up two decades ago. He suggested that the *merger regulation* – passed under France's 1989 presidency – should be reviewed and perhaps modified to give *industrial* considerations greater priority.

Mr Carlo Bernini, the Italian minister, added: "It's the first time the Commission has taken a decision of this type and it doesn't seem to us a very encouraging debut."

Editorial Comment, Page 18

Thatcher may disown Major deal on single currency

By **Philip Stephens** in Blackpool

MRS Margaret Thatcher, the former British prime minister, is prepared to disown publicly the compromise deal on a single European currency that Mr John Major, her successor, expects to conclude at the Maastricht Summit in December, threatening another row over Europe in the ruling Conservative party.

She is also, according to close associates, considering a campaign to call for a national referendum on the proposed changes to the Treaty of Rome if the agreement is signed.

The amendments to the treaty would signal British agreement to move towards a single currency but leave a final decision on sterling's participation to a future parliament.

Her uncompromising stance, known among friends and associates and by senior ministers, risks undermining Mr Major's attempts to present the Conservatives as a united force in the immediate run up to the general election.

It will also create an undercurrent of tension between Mrs Thatcher and Mr Major when they appear together at the Conservative party conference in Blackpool, northern England, tomorrow.

Mrs Thatcher has said publicly that she is reluctant to criticise her successor "unless there were really major points of principle involved".

However, the government's insistence that the proposed amendments would not commit Britain irrevocably to economic and monetary union (Emu) have failed to persuade her that they would not mark a decisive step towards a federal Europe.

For her, treaty changes to pave the way for Emu would foreshadow an irreversible transfer of sovereignty from the Westminster parliament to Brussels.

She believes that they would be the precursor to political union and the eventual *creation of a federal superstate.* The influence over *economic* policy and public spending handed to Brussels might even weaken Britain's defence effort.

She regards that prospect as far more damaging to Britain's future than the risk of divisions within the Tory party. She is convinced also that the

Continued on Page 20

Background, Page 11

Big Westinghouse property provision unsettles Wall St

By **Martin Dickson** in New York

WESTINGHOUSE Electric, the US conglomerate, is to take a $1.68bn third-quarter provision, mainly to cover problems in the depressed property market.

It also unveiled yesterday a package of restructuring measures including the replacement of the head of its financial services arm, 4,000 job cuts, some $900m of equity issues and possible asset sales.

The news sent Westinghouse shares 11 per cent lower in morning trading and unsettled the wider equity market. Wall Street has long been concerned about the quality of assets held by Westinghouse's financial services arm and its heavy exposure to property, but the size of yesterday's provisions came as a surprise.

Analysts said the action was likely to foreshadow large third-quarter property provisions by banks and other financial services groups. Mr David Shulman of Salomon Brothers has forecast that they will take write-offs akin to those in the 1980s on loans to less developed countries.

Eight months ago, Westinghouse took a $975m pre-tax charge to cover losses and radical cuts at its financial services arm. Mr Paul Lego, chairman, blamed the second round of provisions on prolonged recession, lack of credit in real estate markets and oversupply of commercial properties. He said yesterday's "decisive" action was designed to ensure that 1992 produced an improved operating performance.

All but $250m of the $1.68bn pre-tax provision relates to property. It raises Westinghouse's reserves to $2.75bn, some $2.08bn of it covering the real estate portfolio, which includes $4.7bn of assets and $1.7bn of off-balance sheet commitments. The real estate loss reserve equals about 68 per cent of the group's underperforming property assets, which totalled around $3bn at September 30.

It announced a plan to increase cash flow by $500m a year by the end of 1992, including a $200m a year cost-cutting programme which will eliminate some 4,000 jobs across the group. Westinghouse currently employs 115,000. There will be an additional $160m third quarter charge to cover this.

It also intends to issue about $900m of equity by methods including private placements and a $400m issue of stock to its pension fund in lieu of cash. It made a large equity issue earlier this year to aid restructuring. The chairman of Westinghouse Financial Services, Mr William Powe, will be replaced by Mr Leo Yochum, who was chief financial officer until his retirement in 1988.

Westinghouse's third-quarter results, showed a net loss after charges of $1.48bn, or $4.86 a share, on revenues of $3.4bn, compared to net income of $255m, or 87 cents a share, on revenues of $3.17bn. The net loss for the first nine months was $1.26bn, or $4.11 a share, compared to income of $717m, or $2.44 a share.

Lex, Page 20; Wall Street, Back Page, Section II

CONTENTS

Lines drawn in debate over N American free trade zone

President Carlos Salinas de Gortari says Mexico, Canada and the US are likely to agree a trade accord in the new year. But some tough talking remains over contentious issues like foreign car imports
Page 7

MARKETS

STERLING
New York lunchtime:
$1.7346
London:
$1.7355 (1.739)
DM2.915 (2.9175)
FFr9.9225 (9.935)
SFr2.555 (2.5825)
Y224.5 (226.25)
£ index 90.7 (90.9)

GOLD
New York: Comex Dec
$362 (361.7)
London:
$359.6 (356)

N SEA OIL (Argus)
Brent Nov
$$21.95 (21.45)

Chief price changes yesterday: Page 21

DOLLAR
New York lunchtime:
DM1.681
FFr5.7225
SFr1.4745
Y129.32
London:
DM1.6795 (1.6775)
FFr5.7175 (5.7125)
SFr1.472 (1.467)
Y129.4 (129.95)
$ Index 84.2 (same)
Tokyo close: Y129.53

US LUNCH RATES
Fed Funds: $5\frac{1}{8}$%
3-mo Treasury Bills: 5.156%
Long Bond: $103\frac{7}{8}$
yield: 7.782%

STOCK INDICES
FT-SE 100:
2,596.2 (-28.4)
FT Ordinary:
1,989.7 (-29.0)
FT-A All-Share:
1,253.92 (-1.0%)
New York lunchtime:
DJ Ind. Av.
2,948.57 (-13.19)
S&P Comp
380.28 (-0.96)
Tokyo: Nikkei
24,330.83 (-266.07)

LONDON MONEY
3-month interbank:
$10\frac{5}{32}$ (same)
Life long gilt future:
$96\frac{11}{32}$ ($95\frac{27}{32}$)

EC pledges Ecu2bn Soviet aid

By David Buchan in Luxembourg

THE European Community yesterday pledged to put up one-third of a total Ecu6bn ($7.3bn) western credit facility for the Soviet Union to buy food and medicine abroad.

The EC expects the remaining Ecu4bn to come from the three non-European members of the Group of Seven industrialised countries – the US, Japan and Canada – "in a sharing of the burden with our partners", Mr Wim Kok, the Dutch finance minister, said yesterday.

The Dutch presidency of the EC said that half of the EC money would be used to finance Soviet purchases of food and medicine in the Community itself, and half on purchases from eastern Europe and the new Baltic states.

The latter, so-called "triangular", operation is designed to ease the pressure from central European food exporters on the EC market.

The plan, agreed yesterday by EC finance ministers after last week's consultations in London with Prime Minister John Major, who currently presides over the G7, falls well short of Soviet requests for more than $10bn in western aid.

The west regards these requests as exaggerated, and Mr Jacques Delors, the European Commission president, said the G7 would have to send a high-level mission to Moscow to get assurances about Soviet needs, policies and governmental structure. By no means all of the Ecu6bn total will be new money. The EC plans to include in its contribution the Ecu250m worth of free food it is now sending to the Soviet Union, and its already-agreed Ecu500m food credit guarantee. The new element will be a Ecu1.25bn Community loan to Moscow.

Likewise, the US has already announced agriculture credit of more than $1bn. Only Japan is being looked to for a sizeable commitment of fresh money, and EC officials believe Tokyo's position towards the Soviet Union is at last softening. Mr Delors stressed that the Soviet credit facility was an operation of the G7, rather than the Group of 24 aid programme for eastern Europe. The Community and its member states had together shouldered 78 per cent of the G24 programme's cost, he said.

EC officials indicated that some economic conditions would be attached to the credit line. Aid will be provided unconditionally to the extent that real hardship emerges, as is the case with current EC food and drug deliveries to Soviet orphanages, hospitals, and old peoples' homes.

But given that Moscow's problems are to a large degree the result of its farmers reacting to high inflation by hoarding stocks or diverting them to private markets, the west will insist on the rouble being stabilised.

The EC hopes Moscow will exploit the technical help to which it is now entitled by its new association with the International Monetary Fund.

Yugoslav army reservists take a break for a smoke during a lull in the fighting in the streets of the eastern Croatian town of Vukovar

Army of preoccupation in Baltics

Gillian Tett reports on the growing impatience for a Soviet pull-out

WHEN SOVIET troops first arrived in the Baltics during the Second World War, they did so in a matter of days. Fifty years later, in the wake of the Baltic states' newly won independence, it seems it will be years before they leave.

"Formally, Latvia is now independent. But, when we see all these army troops around us, we feel independence is still an illusion," says Mr Juris Dobilis, deputy chairman of the Latvian Parliamentary Defence Commission.

In an attempt to force Soviet military leaders into serious negotiations, the three Baltic presidents issued a statement last weekend in the Lithuanian capital, Vilnius, demanding that Soviet troops start pulling out of Baltic capitals by December, with a full-scale withdrawal being put into operation "as soon as possible".

But the pleas seem to be falling on deaf ears. Although Marshal Yevgeny Shaposhnikov, Soviet defence minister, has conceded that the Soviet military will eventually withdraw from the Baltics, he is insisting that this can only take place after troops have left eastern Europe.

Ministry of Defence officials argue, with some justification, that with military housing already in acutely short supply following the withdrawals from eastern Europe, they simply do not have the accommodation or means to redeploy the Baltic troops. Military bases, such as in Kaliningrad, the Russian enclave south of Lithuania, which would be the most likely redeployment area for troops based in Lithuania, are already severely overcrowded.

This pushes the start of a Soviet military withdrawal from the Baltics back to 1994 – a scenario that leaves Baltic leaders wearily resigning themselves to long and delicate negotiations before the troops leave.

Officers at the north Vilnius army barracks, headquarters of the Soviet army in Lithuania, last week sent a statement to the Lithuanian government in which they refused to accept President Vytautas Landsbergis' demand that they leave by the end of the year. They asked

that their social conditions, such as access to schools and housing, be guaranteed until they leave. They, too, do not see themselves withdrawing until 1994 at the earliest.

Some small victories have already been won. Early in September, the much-hated special interior ministry "Black Beret" troops were finally officially disbanded and most of its members despatched several thousand kilometres east to Tyumen in Siberia.

The conscripts and officers from the Baltic states who were serving in the Soviet army are now being released and all three Baltic states are drawing up plans to create their own fledgling armies, or "home guard", as they modestly prefer to call them. Three weeks ago in Vilnius, a small contingent of troops left the city's barracks under a Lithuanian police escort – an event which some Lithuanian officials interpreted as the Soviet army's first symbolic withdrawal.

Furthermore, according to Mr Aloizs Vaznis, Latvian interior minister, working commissions are being set up between the Soviet military and Baltic governments to negotiate both a possible timetable for withdrawal and also the tricky question of the future of vacated Soviet installations.

But, as Mr Vaznis points out, the Baltics have little leverage. "Even if we say they should go, they might simply not," he said. Their task has been made harder by the confusion in the Soviet centre, and the fact that they have to negotiate separately with the interior ministry forces and with the army, navy and air force branches of the defence ministry.

As a senior western military official in Moscow points out, even if Soviet army leaders now accept an eventual withdrawal, there is likely to be fierce opposition from Soviet naval commanders, reluctant to lose bases such as Riga, or Paldiski in Estonia. These are arguably of greater strategic value than the Baltic army bases. Abandoning the warmer water ports of the Baltics would be irreversible, unlike moving mobile troops east into Russia.

As a further handicap, Baltic leaders have only the sketchiest of data about the estimated 400,000 troops in the Baltics, or the thousands of military complexes there. Riga alone, the headquarters of the Baltic military command, has an estimated 100 of these complexes, which include hospitals, transport depots and military factories. Baltic leaders are now demanding control over all these complexes. Some, like Mr Audrius Butkevicius, director of the Lithuanian department of national defence, believe they should be handed over freely as compensation for the "damage the Soviet army has inflicted on Lithuania", while more flexible Latvian officials recognise that the Soviet military are unlikely to do this.

They suggest instead that Latvia could buy some of the military hardware cheaply to equip its own fledgling army. An even more radical solution proposed is that Latvia could "purchase" the military buildings – and hasten the military withdrawal – by contributing to the cost of building new accommodation for Soviet troops elsewhere in the Soviet Union. They hope this can be done with western aid.

"We have to be more flexible in Latvia because of our demographics," explains Mr Dobilis. Nearly half of Latvia's population is non-Latvian, and there are fears that conflicts over the troops' withdrawal could fuel tension in the republic, particularly since a significant number of these non-Latvians are ex-Soviet military personnel. Soviet army officers frequently chose to retire in Latvia during the 1970s and 1980s because of its relatively better living conditions.

Some radical Latvian nationalists are now demanding that these retired military officers are deported when the troops leave. But, as Mr Dobilis wearily points out, this could complicate the already tricky negotiations with the Soviet military. "Our first priority is simply to get the troops out," he says. "That's going to be quite difficult enough as it is."

Britain's reluctance to give up its 'duty-frees' irks Brussels

By Andrew Hill in Luxembourg

THE EC tax commissioner, Mrs Christiane Scrivener, yesterday attacked Britain for wanting to delay the abolition of duty-free sales within the European Community for up to 15 years. She said the British proposal for a 10-15 year transition period suggested the UK was not interested in having a genuine barrier-free internal market.

National experts were last night trying to produce a compromise for EC finance ministers, finalising the structure of indirect taxation in the EC after 1992. Among other things, such a compromise would cover the gradual abolition of duty-free sales during internal EC journeys.

The Dutch presidency, backed by the Commission, yesterday proposed a four-year transition period for the abolition of duty-free sales. But a December 1996 deadline is too soon for some member states, such as Britain and Portugal.

Mrs Scrivener yesterday repeated the Commission's desire for a short transition period, the abolition of all EC frontier controls from 1992, and the definitive abolition of duty-free sales at the end of the transition period.

Officials were also re-examining plans for a transitional system of administering value added tax on EC exports and imports after 1992 in an attempt to iron out remaining differences between states.

The EC business lobby has warned member states that they risk adding to, rather than reducing, the administrative burden on small and medium-sized companies.

● A power dispute between the EC's two main institutions has prevented finalisation of an accord which would bring Norway and Sweden under EC air transport rules, Reuter reports from Brussels.

Officials said EC transport ministers had agreed with the substance of the accord but had failed to approve it as it would give Brussels powers to negotiate air transport accords with the two states on behalf of EC members.

Australia urges hard line on farming

By William Dullforce in Geneva

THE ONLY way to make a breakthrough in the international talks on trade liberalisation was for Mr Arthur Dunkel, director general of the General Agreement on Tariffs and Trade, to put forward "a take it or leave it paper" on world farm reform, Mr Neal Blewett, Australia's trade minister, said in Geneva yesterday.

In order to prepare his proposal, Mr Dunkel needed a signal from the European Community in the next four to five weeks that it was ready to negotiate an agreement that would guarantee an "irreversible shift" in governments' present systems for subsidising agriculture, he added.

Mr Blewett met Mr Dunkel yesterday at the end of a six-day visit to EC capitals by an Australian bipartisan political team that included Senator Robert Hill, shadow minister for foreign affairs.

In Brussels, Bonn, The Hague and London, the delegation had found both a sense of urgency and signs of movement on the farm reform issue, Mr Blewett said. The German, Dutch and British governments appeared to be ready to give the EC Commission the "elbow room" it needed to negotiate an agreement on agriculture in the Uruguay Round. But French ministers were still resisting any meaningful change in EC farm subsidy practices.

"Everything is seen exclusively in terms of French politics. They are obsessed with their own domestic difficulties," Mr Blewett said.

A breakthrough on farm reform is essential to a successful completion of Gatt's Uruguay Round, where far-reaching accords to liberalise world trade have been under negotiation for nearly five years.

The next few weeks would make or break the round, Mr Blewett said. There could be no "low-level, cosmetic deal" on agriculture. The Cairns Group of 14 farm-exporting nations, which Australia leads, could not settle for anything less than a substantial result on agriculture that would bring significant reductions in farm support and protection.

In their meetings Mr Blewett and his colleagues protested against the damage being done to Australian farmers by the subsidies war between the EC and the US which has escalated over the past year. EC and US subsidies had cost Australian farmers A$700m (US$560m) this year, of which A$645m had been in the grains area, Mr Blewett said.

VW chief says west must save eastern Europe from chaos

By Alan Cane

CENTRAL Europe should be a testbed for the transformation of the planned economies of the east into the market economies of the west, Mr Carl Hahn, chairman of Volkswagen said yesterday.

Speaking at a Financial Times conference in London, he said such transformation would be difficult, expensive and with no certainty of success. Foreign trade had to be stabilised first.

Trade between former Comecon countries should be revitalised. "This is one of the most important preconditions for bringing the decay of economic activity to a halt," he said. The foreign trade of those countries used to be a third to four-fifths of Comecon trade. "They have lost their most important sales markets overnight without a realistic chance of finding a swift substitute."

Western governments and businesses had to act now in order that central, southern and eastern Europe should not decline into chaos.

The transformation of economies and industries against a backcloth of unprecedented change in Europe dominated the conference. The problems of eastern Europe and the Soviet Union were a primary source of anxiety.

Mr Hahn said the responsibility for stabilising political and business activities in central and eastern Europe lay squarely with the west. It would take substantial capital investment.

He said the first priority was to restructure central Europe: eastern Germany, Poland, Czechoslovakia and Hungary. The aim should be to carry out a small test of the transition from a planned to a market economy in a restricted area under favourable conditions.

He said success in creating a market economy in central Europe would allow a bridge to be built with the rest of eastern Europe over which know-how and capital would flow – "quite apart from the fact that in this way we shall be opening up one of the outstanding potential markets on our continent."

In western Europe, industries faced radical change, several speakers said. Mr Anders Scharp, chairman of the Swedish Electrolux group, said there would be further consolidation in manufacturing. Some governments were supporting ailing industries by a variety of means that were at odds with

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competition policy, while other countries were protecting industries they believed to be of strategic importance.

Manufacturers would have to bring their marketing and product strategies up to date and try to form transnational groupings. There was room only for market leaders and niche players.

"Never be a medium-sized company; that way, you have lost the game," Mr Scharp said.

Mr Francis Lorentz, chairman of Groupe Bull, the state-owned French computer manufacturer, said the computer industry was in crisis, with many manufacturers sustaining heavy losses.

Information technology companies should collaborate in research and development, in the development of standard computer designs and in manufacturing to cut costs. However, they should should compete in other areas, he said.

Collaboration could be with American or Asian competitors and might involve equity investment. It was important that European companies remained European-owned, he said. Up to 150,000 highly skilled jobs could be lost in Europe if its information technology industry disappeared.

Sir Allen Sheppard, chairman of the UK-based Grand Metropolitan group, raised three areas where differences in practice between Britain and continental Europe were penalising UK traders.

He complained of losses caused by the counterfeiting of famous brands. "European trademark systems are hopelessly ineffective. Infringers get away with murder," he said.

While German or French manufacturers found distribution in the UK comparatively simple, in continental countries, the retail food trade was highly fragmented. "Thousands of small buyers need a sales visit. This means you have to run the sort of sales force that was common in Britain 20 years ago. It is expensive and inefficient."

Mr Koichiro Ejiri, chairman of Mitsui, said Japan was now looking more philosophically at its relations with the rest of the world. The consequences of trade friction had spurred debate about the best way to make Japan's economic behaviour more socially acceptable.

Criticisms of the part played by Japan in the Gulf war had persuaded the Japanese that they should streamline and strengthen their decision-making processes "to allow quicker and more timely actions based on established principles and clear objectives".

He raised the possibility of establishing an Asian economic group with Japan at its centre comparable with the European Community and the North American Free Trade Agreement.

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Bonn defends EC telephone monopolies

By Hugo Dixon in Geneva

GERMANY will oppose moves to abolish telephone monopolies throughout the European Community when they are reviewed by the Commission next year, according to Mr Christian Schwarz-Schilling, the country's minister of posts and telecommunications.

Germany's position makes *substantial liberalisation of EC* telecommunications unlikely next year.

Without German support, there is little chance of political agreement to abolish the monopolies. This means that the only way liberalisation could be achieved would be by the Commission applying the Treaty of Rome's competition law on its own authority.

Brussels used competition law to force the liberalisation of telecommunications terminal equipment and data communications services in the late 1980s. But voice communications, which account for 90 per cent of the market, remain monopolies except in the UK.

Mr Schwarz-Schilling said in an interview that he did not want to subject Deutsche Telekom, the country's monopoly operator, to more competition at the same time as it was having to modernise the infrastructure of former East Germany.

He also rejected plans by the country's railway authority to set up a pan-European telecommunications network with other European railway companies in competition with the telephone monopolies. However, he did not rule out extending competition at a later stage.

Mr Schwarz-Schilling said he planned to privatise Deutsche Telekom in the next two years and was discussing the matter with the political parties. Under German law, telephone and other public services must *be provided* by the state. Changing this requires a two-thirds majority in parliament.

The minister is expected to announce further competition in mobile communications today Twenty-two more *licences for private mobile* radio systems, used by taxis and similar fleets of vehicles, are to be awarded. The government is also likely to license a personal communications network to compete with the two existing cellular systems.

THE VALUE of west German industrial orders fell in August by a provisional 3 per cent in comparison with the same month last year, the Bonn Economics Ministry reported yesterday, writes Christopher Parkes.

After seasonal adjustment, manufacturing *industry* order books were only 1 per cent higher than in July, compared with the 4.6 per cent month-on-month increase recorded in 1990. All of this modest improvement came from domestic markets, which showed a 2 per cent rise, while overseas orders last month were 0.5 per cent lower than in July.

Turkish diplomat shot dead in Athens

By Kerin Hope in Athens

A TURKISH diplomat was shot dead yesterday in a residential district of Athens in attack bearing the hallmarks of November 17, a left-wing Greek terrorist group.

It came on the eve of a visit to Istanbul by Mr Constantine Mitsotakis, Greek prime minister, for the funeral of Ecumenical Patriarch Dimitrios, spiritual leader of the world's 250m Orthodox Christians.

Mr Mitsotakis condemned the killing, saying it was intended to "create problems in Greek-Turkish relations and undermine our country's interests".

The diplomat, Mr Cetin Gorgu, 28, was shot in his car when leaving for work. The two gunmen escaped. There was no immediate claim of responsibility, but the prime minister said November 17 appeared to be responsible.

The group has claimed 16 political assassinations since 1975 but none of its members has ever been arrested.

Greek-Turkish relations are already strained over lack of progress in efforts to reunite Cyprus, and a dispute over the Moslem minority in northeastern Greece.

Nordic strategy sought on EC

By Robert Taylor in Stockholm

THE Nordic countries must co-operate on a joint strategy towards EC membership, Mrs Gro Harlem Brundtland, Norway's prime minister, said yesterday.

Writing in Sweden's leading newspaper Dagens Nyheter, she argued that a united Nordic region would have much greater influence inside the EC than if Nordic countries entered the Community separately.

Mrs Brundtland is trying to widen Norway's debate beyond domestic preoccupations with the fishing industry and agriculture to emphasise the dangers of a self-imposed isolation *if Norway is left behind the* other Nordic countries' approaches to the EC.

A third of Norwegians support an EC application, a third are opposed and a third are undecided. The local government elections in September saw gains for the Centre and Socialist Left parties who are campaigning against EC membership.

Mrs Brundtland's Labour party will decide at its party conference in the autumn of next year whether Norway should seek EC membership, although it is possible the date of that gathering could be brought forward.

The prime minister does not *disguise her personal* wish that Norway should seek EC membership once an agreement is reached on a European Economic Area between the EC and the European Free Trade Association. She would like to see Norway's negotiations on EC membership take place in 1993 alongside countries such as Sweden and Austria, which have already submitted their applications to join. Finland looks increasingly likely to apply by next spring.

Last week the Norwegian government said it was carrying out an inquiry to find out what would happen to Norway if it stayed outside the EC but the other Nordic countries joined.

Brundtland: wants talks

Bonn-Prague friendship treaty

By Ariane Genillard in Prague

MR Hans-Dietrich Genscher, the German foreign minister, and Mr Jiri Dientsbier, his Czechoslovak counterpart, initialled yesterday a treaty of friendship and co-operation between the two countries.

Mr Genscher was accompanying Mr Richard von Weizsäcker, the German president, who is visiting both the Czech and Slovak republics this week. The treaty is the fourth signed by Czechoslovakia with another European country.

German capital amounts to 86 per cent of total foreign investments in the Czech republic, according to Mr Jan Vrba, Czech minister of industry.

The signing of the treaty, which has to be ratified in parliament, was delayed for several months, partly because of the claims of the Sudeten Germans who were expelled from Czechoslovakia in 1945. They recently agreed to drop the demand that they be compensated for their confiscated property. There was also difficulty over the wording of references to the period between 1939, when Germany invaded Czechoslovakia, and the end of the Second World War. The final text referred to the "continuous existence of the Czechoslovak state since 1918", when the original Czchechoslovak state was founded.

This sentence has infuriated Slovak politicians because it makes no mention of the existence of an independent Slovak state, which was pro-Hitler, between 1939 and 1945.

Dienstbier: fourth pact

Belgian poll likely for end of November

MR Wilfried Martens, the Belgian prime minister, tipped November 24 as the date for general elections after leaders of his strife-torn coalition met yesterday to prepare an agenda for their last weeks in office, Reuters reports from Brussels.

King Baudouin refused on Sunday to accept Mr Martens' offer to resign immediately in a political crisis.

The four-party coalition made up of Christian Democrats and Socialists from the two halves of the linguistically-divided country has fallen apart in feuding between Flemish- and French-speaking partners.

With elections due in any case by January, the king declined Mr Martens's offer to resign immediately.

Instead, he told the prime minister to to stay in office long enough to prepare the ground for a new administration after early polls.

An official statement issued after yesterday's cabinet talks said a full ministerial meeting would be held today to deal with stopgap budget measures and to prepare for constitutional reforms by the next government.

Far right makes further advances

By Christopher Parkes in Bonn

GERMANY yesterday counted the human and political costs of growing violence against foreigners, with police reporting about 50 weekend attacks on non-Germans, and the opposition SPD party suffering serious losses in Hanover to the benefit of the right-wing Republican party.

The SPD, which stands firmly against any change in the law on asylum seekers, suffered its worst local election result since the war in Hanover, the capital of Lower Saxony. It took less than 42 per cent of the vote, compared with more than 47 per cent in 1986. The Republican party won at least two seats.

SPD officials accused Germany's ruling Christian Democrats (CDU) of muddying the election campaign by focusing on the issue of asylum. This has leapt to the top of the political agenda since the latest wave of racist attacks began with the fire-bombing of an asylum-seekers' hostel in Hoyerswerda, east Germany last month.

In one of last weekend's incidents, a Russian soldier was seriously injured after being thrown from a third-floor window.

A week ago the SPD lost its overall majority in state elections in Bremen and six extreme right-wingers from the Deutsche Volksunion were elected to the state parliament following a similar campaign.

In Lower Saxony as a whole, the Socialists' share of the vote was virtually unchanged from 1986 at 40 per cent. But the weekend result suggests it has lost the gains it registered in the interim: in the state parliament election last year, it took a 44 per cent share.

President Richard von Weizsäcker was drawn into the row after he was reported to have said he did not feel a tightening of constitutional provisions on the right of asylum – the CDU's proposed response – would make any difference to the increasing flow of people seeking asylum in Germany.

Chancellor Helmut Kohl declined to comment, but party officials called the president's intervention "unhelpful".

Shamir holds to hard line on talks

PROSPECTIVE Middle East peace talks will fail if the key Arab demand that Israel relinquish occupied territory is made the main focus of negotiations, Mr Yitzhak Shamir, the Israeli prime minister, told the country's parliament yesterday. Hugh Carnegy writes from Jerusalem.

Mr Shamir offered little sign of flexibility in advance of the regional peace conference which Washington is working to convene this month or next when he addressed the Knesset at the opening of its session.

The speech, which the US and his Arab foes are bound to scrutinise closely, welcomed the prospect of negotiations, but said they must be on Israel's terms.

Mr Shamir took care to point out there was still no assurance that the conference would take place and stated his belief that real stability in the region would only be possible when democracy had replaced what he called unreliable, totalitarian Arab regimes. Israel "must necessarily exercise great caution and alertness".

He said Israel had agreed that UN Resolutions 242 and 338 should be the basis of negotiations, but restated his government's rejection of the view, held by the US and Arab states, that the resolutions imply that Israel must withdraw from territories occupied in 1967 as a pre-condition for a peace settlement.

"If our neighbours put only territorial issues at the centre of the discussions we will know that they joined the process only for this reason and not for peace, and we will draw conclusions accordingly," Mr Shamir said.

He said the opening peace conference would be purely ceremonial, lasting only one or two days before substantive bilateral negotiations began.

Israel would walk out if the Palestinian representatives announced they were appointed by, or represented the Palestine Liberation Organisation. He warned the Arab side not to expect US pressure on Israel to yield results. "The US role must be that of an honest broker," Mr Shamir said.

The prime minister immediately came under passionate attack for his approach by Mr Shimon Peres, the opposition Labour party leader, who advocates accepting the concession of land for peace.

Palestinians barred on anniversary of deaths

Left: An Israeli border policeman holds back a Palestinian yesterday from entering Jerusalem.

ISRAEL yesterday barred Palestinians from Jerusalem, where tearful families prayed and lit candles to mark the killing of 18 Arabs by police in the Old City a year ago, Reuter reports from Jerusalem.

Paramilitary police and soldiers turned back residents of the occupied West Bank and Gaza Strip to prevent trouble ahead of the October 8 anniversary of the bloodiest civil unrest since Israel captured the territories and East Jerusalem in the 1967 Middle East War.

Families gathered for memorial services in east Jerusalem theatres, where videotapes and books of what they call the al-Aqsa massacre were displayed.

One year ago the al-Aqsa and Dome of the Rock mosque compound, Islam's holiest site after Mecca and Medina, echoed to the crackle of gunfire as police chased thousands of Palestinians out of the complex known to non-Moslems as Temple Mount. Seventeen Arabs were killed by police on the mount, some shot from behind while fleeing. Another was killed nearby in the narrow streets of the walled Old City.

The killings, for which no police officer has been prosecuted, brought Israel worldwide condemnation.

Relatives, sitting beside pictures of the slain, said they were sorrowful yet proud their sons and husbands had died defending the mosques from Jewish extremists. They were referring to a tiny group of ultra-nationalists called the Temple Mount Faithful who try each year to reclaim the site from Moslems.

Last year, as always, the Israeli authorities prevented the group from entering the mount to lay a symbolic cornerstone for the rebuilding of the biblical Jewish Temple. But thousands of Arabs gathered, fearing extremists would enter the complex.

An Israeli government-appointed inquiry in November blamed Palestinians for starting the violence by stoning Jewish worshippers at the Wailing Wall, Judaism's most sacred site, which abuts the mosque complex.

A coroner's report in July, however, challenged this. Judge Ezra Kama said the accidental setting off of a police teargas grenade, not Palestinians, ignited the violence. He criticised the police for firing but recommended against putting police officers on trial.

Only one of the 18 bereaved families has challenged the police in court. The others say they have no faith in the Israeli judicial system.

"I have no trust in the Israeli courts or in the Israelis in general," said Mr Jihad Hamideh al-Yassini, father of the youngest victim, Izal al-Yassini, aged 15. Standing beside a huge candle bearing his son's name Mr Yassini said he expected neither a prosecution nor compensation for his son's death.

"I can't bear to ask for compensation for the blood of my son. Even if I was paid money I would feel like I was eating my son's flesh and drinking his blood if I used that money."

Mr Adnan Husseini, director of the Islamic Council which runs al-Aqsa, said for the families it was enough to know that their relatives had died "defending Islam".

For most Israelis the Temple Mount killings are history. But at least one Israeli lawyer is seeking justice. Mr Avigdor Feldman, attorney for the Israeli Arab relatives of victim Adnan Mawasi, is urging the Jerusalem prosecutor to press charges against the police of unjustified use of arms.

Turkey postpones regional water supplies conference

By Tony Walker in Cairo

TURKEY yesterday announced it was postponing a Middle East water conference to avoid disrupting a planned regional peace summit due to be held by early next month.

Turkey's announcement followed threats by Syria and other Arab states to boycott the water conference if Israel attended. The Foreign Ministry in Ankara said the gathering had been postponed to "await the outcome of efforts to convene a Middle East peace conference".

Mr Abdel Halim Khaddam, Syria's vice-president, said in a newspaper interview published at the weekend that "Israel has no right even to a single drop of water in this region".

Mr Khaddam's remarks coincided with a warning from Lieutenant General Mohammed Tantawi, Egypt's new defence minister, that his country would not hesitate to use force to guarantee a continued supply of Nile water.

Gen Tantawi also predicted, in an interview with al-Ahram, the Egyptian daily, that future Middle East wars could break out on the issue of water.

"One of the reasons for any future conflict might be the struggle for water, because any attempt to control water resources will be considered a direct threat to the national security of the beneficiary states," he declared.

"Therefore, the close links between Egypt's Nile interests and its national security pushes it to draw up a comprehensive strategy to confront any threats or attempts to control the Nile."

The river is virtually Egypt's sole source of water and is vulnerable to interference by African states through which it passes.

Another Middle East issue of life and death

Only land is a bigger source of friction than the question of water supplies, writes Tony Walker

MR Eliahu Ben-Elissar, chairman of the foreign affairs and defence committee of the Israeli parliament, put the issue succinctly.

Seated in his Knesset office with its views of the treed and well-watered Jewish suburbs of Jerusalem, he declared: "This is a region where either you have water, or you don't have water: either you live or you die."

As efforts continue to convene a Middle East peace conference no issue, with the exception of control of territory itself, is likely to prove more vexatious than argument over a sharing of the region's depleted water resources.

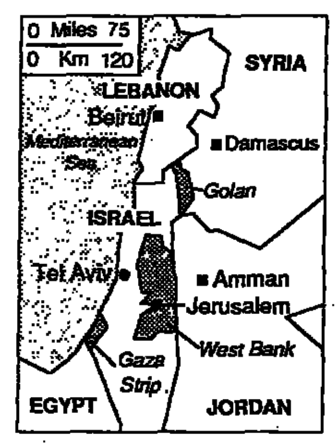
Water supplies are simply insufficient for the fast-growing populations of countries and territories at the heart of the Arab-Israel dispute.

Professor Hillel Shuval of the Hebrew University's Department of Environmental Sciences warned recently that "left unresolved, they [water disputes] could result in increased political tensions and unrest while presenting major obstacles on the road to peace. If totally neglected and left to fester they could become the cause of the next war in the area."

Among Arab residents of the Israeli-occupied West Bank and Gaza Strip, no issue has proved quite as bothersome on a day-to-day basis as lack of access to plentiful supplies of water for household needs and for agriculture. Mr Abed el Rahman Tamimi, director of the Palestinian Hydrology Group, says: "I can live without Jerusalem for 100 years, but I can't live without water for one day."

Among Israel's first acts after victory in the 1967 war was to declare water in the West Bank and Gaza a strategic resource under military control. Since 1967 Arab residents have been denied permission to drill for water, while Israel has sunk dozens of mostly deep wells for settlements and for military camps.

Mr Tamimi said that all Jewish settlements in the territories – about 100,000 Jews are now living in the West Bank – were supplied with running water. On the other hand, 51 per cent of Arab villages and hamlets are deprived of such a service and are obliged to rely on rain and spring water.



"In some areas," he said, "settlements have swimming pools, while Palestinian villages next door have a shortage of drinking water. No-one can accept that he does not have water to drink and his neighbour has a swimming pool."

Shortages of water for agriculture have led to a sharp drop in the amount of irrigated Arab West Bank land – from 27 per cent before 1967 to 3.7 per cent today. Israeli settlers, on the other hand, are irrigating 70 per cent of their farmland, according to Dr Tamimi.

In some places, says the Palestinian hydrologist, Israeli deep wells have so depleted aquifers that springs have dried up, so that a number of Arab farming communities have virtually died.

Professor Shuval says Israel, whose population is projected to grow sharply in the next five years with an expected influx of about 1m Soviet Jews, faces "serious existential concerns" that its current water resources would be seriously threatened by giving up control over the territories it now holds, in particular the West Bank of the River Jordan.

Such is Israel's dependence on what is known as the "mountain aquifer" under the West Bank that an end to Israeli access to this source of "high quality" drinking water for about 3m of its 4.5m people would, as Professor Shuval observes, would be "completely unacceptable".

It is estimated that about 83 per cent of water from the "mountain aquifer" is being utilised by Israelis, either in the pre-1967 Jewish state or in the territories themselves. Such an imbalance in water usage between the Arab and Jewish populations could not possibly survive a Middle East settlement.

While water problems abound in the West Bank, they are not quite as serious as those in the festering Gaza Strip, with its 650,000 people crammed into a tiny sliver of land bounded by the Mediterranean on one side and Israel on the other. Overpumping by both the Arab population and by Israeli settlers in Gaza and farmers on the boundaries of the strip has depleted aquifers to such an extent that sea-water is intruding, making drinking water brackish.

The Arab population utilises about 55m cubic metres of water a year for household needs and agriculture, compared with 15m-20m cubic metres used annually by just 10,000 Israeli settlers.

While politicians on opposing sides of the Arab-Israel dispute have offered few constructive suggestions about how to deal with the water crisis, Arab and Israeli experts believe that only through regional co-operation can the problem be solved.

Mr Tamimi says that peace must be accompanied by negotiations between Arabs and Israelis on a reasonable sharing of resources.

Professor Hillel agrees, insisting that Middle East peace encompass "a major regional water resources master plan". He advocates harnessing the surplus water resources of Turkey, Lebanon and Egypt for the benefit of deficit states such as Israel and the territories, Jordan and Syria through the construction of "peace" pipelines and canals.

THE FAX REVOLUTION

Hiroshi Hamada, the President of Ricoh, spells out his personal interpretation of the philosophy that drives the company at all levels: a unique way that has led Ricoh to its pre-eminent position

Japanese companies have always placed great emphasis on their company's fundamental philosophy of business, more than their counterparts in Europe or the United States.

The principles which govern the way a Japanese company acts and the attitudes which guide the company's employees from the chairman's office to the workplace are often as important, sometimes more so, than the company's marketing and production strategy.

Even by Japanese standards, Ricoh, a world leader in advanced office automation equipment, places great importance on its philosophy, especially as it can trace its guiding principles back over 50 years to the company founder.

In his office in central Tokyo Ricoh's current President, Hiroshi Hamada, happily pays tribute to Mr Kiyoshi Ichimura, who spelled out his philosophy shortly after founding the company in 1936 as a manufacturer of sensitised paper and cameras.

Mr Ichimura's basic philosophy — the *San Ai* principle — is simply stated: "Love your neighbour, Love your country, Love your work."

Although Ricoh's managers have been perfectly at liberty over the years to change such a philosophy, this has never been felt necessary despite Ricoh's transformation into an international giant employing 44,500 people in 127 subsidiaries, eight research institutes and 24 modern manufacturing plants worldwide.

President Hamada admits that whereas people from overseas have little problem with understanding the first two principles, when it comes to the third — "Love your work" — there is sometimes confusion.

The President clarifies it in this way: "Throughout a person's life he or she must work, and if it is to be useful work, then it must provide a service to others in society. If I was to summarise the San-Ai principle in one sentence, I would say that it means 'Provide genuine service to others'".

Ricoh's founder, Kiyoshi Ichimura, was ahead of his time when, more than 50 years ago, he said: "Business is people. Business starts with people and ends with people."

From the very beginning, Ricoh considered its staff to be the company's greatest asset. And today President Hamada believes that realising the full potential of every company member is the company's most important aim. In order to follow the founder's San Ai principle, Ricoh places great emphasis on another three principles which sum up the company's management philosophy.

"They mean a great deal to us and we try to follow them in our dealings with our customers and the communities in which we operate."

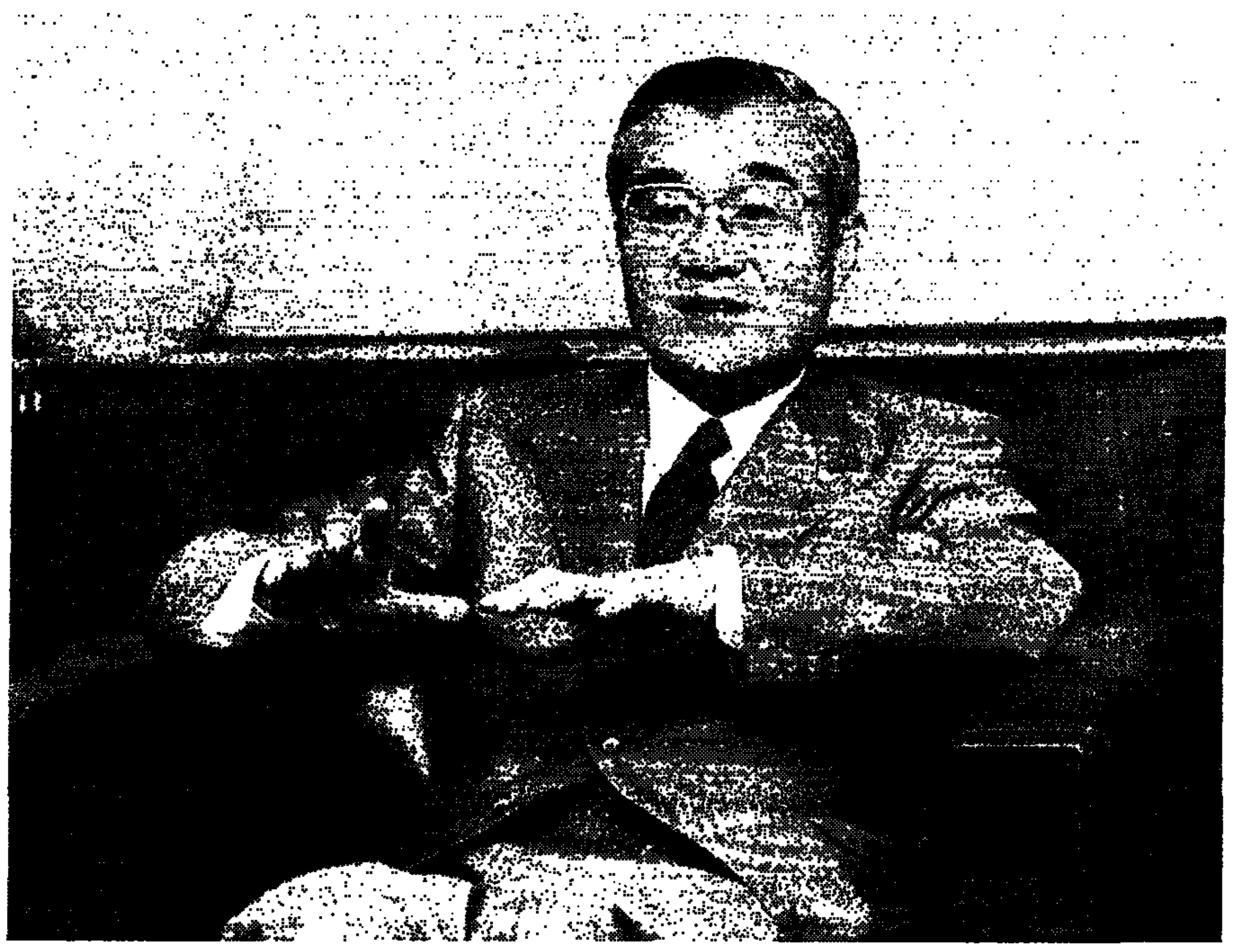
The first principle is that a person should "think as an entrepreneur" by continually improving his or her ability to think and act creatively.

The second, "put yourself in the other person's place", reflects the company's belief that Ricoh should provide not only what customers want but what they really need.

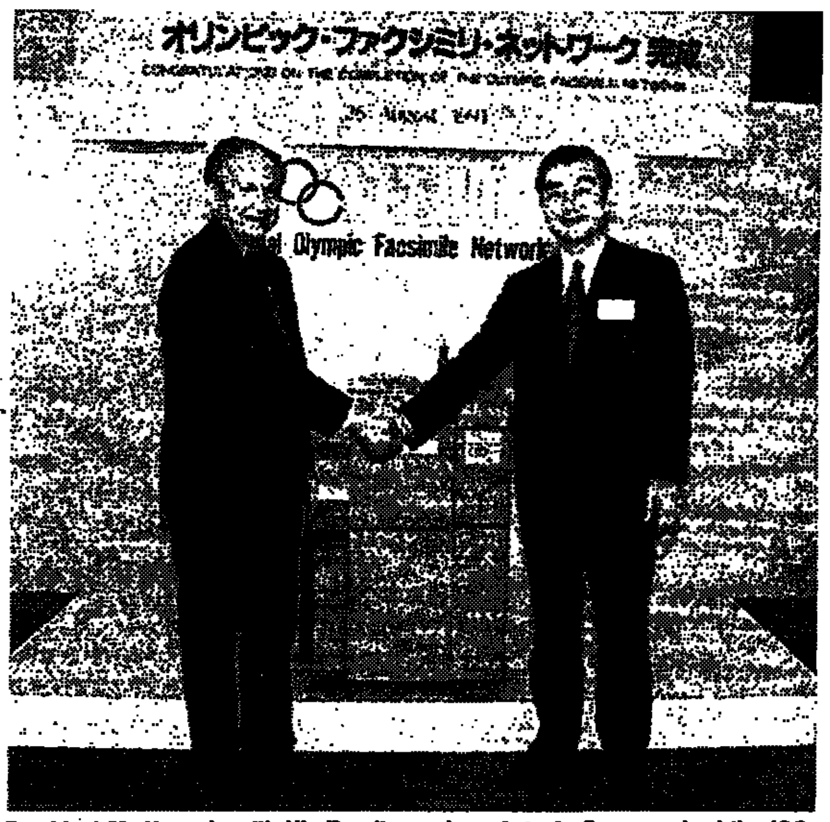
And the third principle, "find personal value in your work" encompasses Ricoh's strong belief that only when someone finds personal value in what they are doing, can they be of service to others.

"Just to improve one's ability is not work," says Hamada firmly. "That is study."

"When we manufacture or develop a product we must keep in mind that our products have value only when information and people can communicate, so we try to focus on the relationship between information and people. We call this 'MMC' — Man Machine Communication."



Hiroshi Hamada: 'Ricoh strives to achieve the company philosophy of providing genuine service to others'



President Mr Hamada with His Excellency Juan Antonio Samaranch of the IOC

THE FIRST OLYMPIC FAX NETWORK

Ricoh has completed the installation of the Olympic Facsimile Network. The occasion was marked by a recent ceremony at the company's Tokyo showroom where President Hamada greeted a distinguished gathering including the President of the International Olympic Committee, His Excellency Juan Antonio Samaranch and Andrew Craig, Executive Vice President and Deputy CEO of International Sports, Culture and Leisure Marketing AG(ISL).

President Samaranch's presence had a special relevance. After all, it was his idea to create an international network of fax machines that would link the 1992 Games and the Olympic Family.

Ricoh was quick to support the concept and was both willing and able to provide the necessary technology and expertise to create the world's first Olympic fax network.

The network, completed in 18 months, now links the International Olympic Committee headquarters in Lausanne, Switzerland with more than 160 countries around the world.

RICOH

Official Olympic Facsimile Network Sponsor

"The fax machine will become more important than the telephone in years to come."
— Hiroshi Hamada.

Since Ricoh has installed the world's first Olympic facsimile network in more than 160 countries on five continents as the official fax sponsor for next year's Olympic Games in Spain and France, cynics may suspect a certain amount of special pleading on President Hamada's part.

Yet, as the President goes on to develop his argument, the possibility that one day the facsimile machine will swap places with the telephone suddenly seems a lot more likely.

Of course, nothing will replace face to face meetings as the primary, and best, means of communication. But, in an increasingly interdependent world of instant communications where so much depends on avoiding misunderstandings, the technological means of communicating assume added importance.

For example, says President Hamada, if two people cannot speak the same language on the telephone, they will be unable to communicate.

But with a fax machine, even if the people involved do not have a common language, they can always use a dictionary at least to get the outline of the message. If this is not feasible then the message can be translated.

International communication by fax, therefore, goes beyond words or language.

Furthermore, the fax machine eliminates previous constraints of time, says President Hamada. Messages can be successfully transmitted and received from Los Angeles or Moscow to Tokyo or Sydney irrespective of the hour or day. Unlike a telephone conversation, time differences are no longer a problem.

Finally, the facsimile stretches communication further than the one-to-one mode of the telephone. With a facsimile, the original message can be shared by any number of people. It is a sophisticated means of communication which Ricoh is now providing all over the world.

The fax revolution has been swift. At the Los Angeles Olympics in 1984, there was hardly a fax machine to be seen. There were not many more at the Seoul Olympics in Korea three years ago. Next year's Games in Barcelona will be linked by fax to every one of the competing nations.

Ricoh's pioneering work in developing fax machines made it a clear favourite to become the official facsimile sponsor and install the world's first facsimile network.

Product development and diversification

Ricoh produced the first business digital fax machine way back in 1973. The company scored another "first" when it successfully completed the world's first international fax transmission of an A4 sheet from Tokyo to New York via satellite in less than a minute.

Ricoh's fax development has come a long way since. The latest Ricoh equipment can fax an A4 size sheet on ISDN lines in a mere 1.5 seconds — seven times faster than most others.

This year Ricoh entered the Guinness Book of Records by producing a notebook-sized fax, the smallest in the world, capable of sending and receiving A4 documents and which can send and receive high quality faxes over a cellular phone.

Ricoh's involvement in the Olympic Games was therefore a natural development, for two reasons.

First, although there are many events taking place in the world every year, if one was to choose the most significant event with the longest history it has to be the Olympic Games, held every four years.

"The event itself is a symbol. No other event can contribute more towards the growth of peace and development of culture than the Olympic Games. This is symbolised by the five linking rings of the Olympic symbol."

Second, and the President makes no bones about it, creating a network which will link the International Olympic Committee headquarters in Lausanne, Switzerland, with all 165 National Olympic Committees, 89 IOC members and 33 International (sports) Federations gives Ricoh an unrivalled opportunity to make its mark on the world scene as a leading manufacturer of office automation equipment.

And while the production of fax machines is an important part of Ricoh's business, it is by no means the most important. In fact, Ricoh's production of copying machines and related supplies still accounts for more than half of the company's world sales, and Ricoh remains the Number One copier manufacturer in Japan. And Ricoh's other activities include products as diverse as optical memory disks to printed circuit boards and high performance SLR cameras.

Localisation in Europe

"Since establishing its first subsidiary in Europe in 1963, Ricoh's expansion has been particularly strong in the region where the company now employs more than 2400 people. Ricoh Europe BV from its headquarters in the Netherlands now coordinates its seven sales subsidiaries and a financial subsidiary as well as the production subsidiaries at Telford in England's west Midlands and Colmar in France."

Europe's importance to Ricoh cannot be under-estimated although it was not always so.

Says President Hamada: "Many years ago we had no idea that we would be conducting operations in Europe on such a large scale. Europe appeared to be too diverse a region in which to conduct unified business, with so many different languages and cultures. But things have changed.

"I have no doubt that Europe will gain in importance in the coming years not only as an important unified market, but also as a centre of culture and peace. And we are very pleased that we now have a number of subsidiaries in Europe which have all been accepted by the local communities."

The way Ricoh has gone about its localisation programme is an excellent example of how the company puts its guiding principle of "putting yourself in the other person's place" into practice.

"We see it as essential to keep working hard to understand the needs of the local community, to keep changing and improving our service as a member of the community and above all, to be able to put ourselves in the shoes of the local community. That is the final goal."

International in outlook, innovative in product development and proud of the long established corporate philosophy, Ricoh's President can look confidently to the years ahead.

"Quite simply, I would like to see our company at the top of the office automation and image processing industry and to be widely recognised as the leader in this field."

■ If you want to know more about Ricoh and its products, visit the Japan Pavilion, S5.105, the Ricoh booth, at Telecom '91 Geneva (October 7 to October 15).

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INTERNATIONAL NEWS

South Koreans defend pace of financial reform

By John Ridding and Steven Butler in Seoul

MR Rhee Young Man, South Korea's finance minister, yesterday defended Korea's pace of financial reform against criticism from trading partners. He expressed hope that a seven-year plan for interest rate deregulation could be accelerated.

He said in an interview that the country's current economic difficulties, including inflation and a ballooning current account deficit, required a gradual approach to financial liberalisation. "If we liberalise interest rates all at once it will produce a lot of side effects," he said.

Last week, a visiting US delegation criticised the pace of financial reform in Korea and said the Korean government did not have a clear vision about the direction of its financial policies.

"The US expressed dissatisfaction because of a lack of understanding about the economic situation in Korea," said Mr Rhee. He said the disagreement was only about the pace of reform and not about the ultimate goal.

Despite Korea's current economic difficulties, Mr Rhee said the situation was improving. "We expect GNP growth of about 9 per cent this year and we will not have much difficulty keeping inflation to single digits."

Although he forecast a current account deficit of about $8bn (£4.5bn) for the year, compared with $2.18bn in 1990, he said the balance of trade was starting to improve.

He added that the sharp increase in this year's deficit was partly the result of special factors, including increased oil imports because of the Gulf war and a surge of aircraft imports.

According to Mr Rhee, an improved economic situation would allow the government to bring forward its plans for financial liberalisation. "The schedule [for interest rate liberalisation] was made in a conservative way. It can be shortened, it will definitely not be postponed," he said.

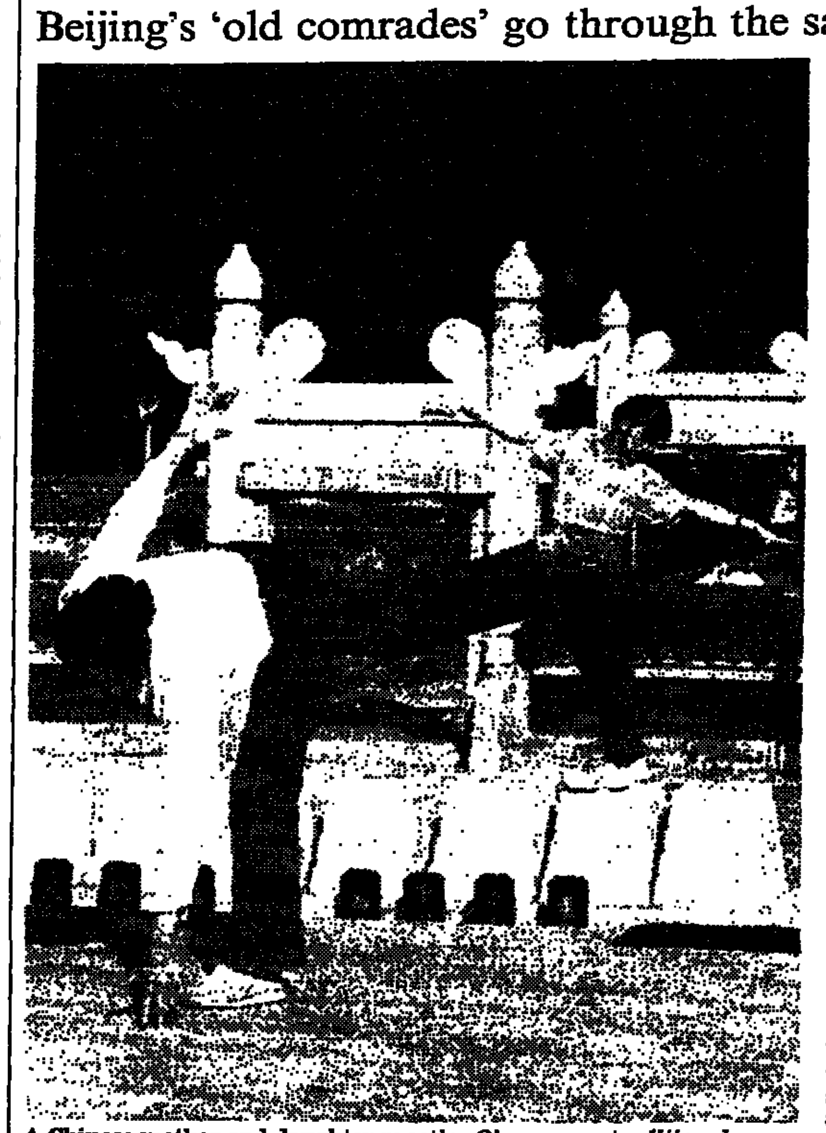
One part of the four-stage liberalisation, the decontrol of long-term deposit rates, had already been brought forward by one year, he said.

Over the last few months South Korea has announced a number of proposals to deregulate its tightly controlled financial markets in an attempt to increase their efficiency.

But trading partners, which are seeking improved access for their financial institutions and improved financing for foreign companies operating in Korea, have complained that the plans are too gradual and limited in scope.

Exercise of power divides China's old guard

Beijing's 'old comrades' go through the same routine of winner-take-all, writes **Robert Thomson**



A Chinese mother and daughter practice Qigong – a traditional exercise combining meditation and physical activity

FOR THE past year, the elderly revolutionaries sitting atop the Chinese Communist Party have argued over what has become a virtual obsession for some of them, *qigong*, a traditional breathing and exercise routine with semi-spiritual pretensions.

The emergence of a *qigong* charismatic movement and its appeal to party octogenarians unnerved by the bleakness of human mortality has become a symbol of the divisions among the revolutionaries, who have rarely agreed since they took control of the country two years ago and crushed the pro-democracy movement.

Party elders are united in disgust at the collapse of Soviet communism, but they are still settling vendettas from 30 or more years ago, and have widely differing ideas on many issues, including the pace of economic reform, the selection of younger leaders, and the counter-revolutionary qualities of *qigong*.

These ultimate arbiters of Chinese policy are intimidated by the erosion of state control over the economy, and yet they concede that economic reform has produced material gains which have lessened the chances of an overthrow in the east European communist style.

The political paralysis among the "old comrades", as they are called in Chinese, has made the Communist Party's official leadership increasingly cautious. Leaders such as Li Peng, the prime minister, have been unable to respond to a financial crisis in state factories, and have resorted to a crude nationalism in defending "Socialism with Chinese Characteristics".

And, as the central leadership becomes ever more irrelevant, ambitious provincial leaders are pushing ahead with economic programmes and building their own power bases outside the existing, revolution-based party structure.

The Chinese party is not another communist domino poised to fall, though the death of an influential elder will prompt a shift in the Beijing power structure, depending on which elder it happens to be. A common mistake in analysing such power shifts is to picture a handful of geriatrics at the helm, and to overlook the hundreds of other revolutionary-era cadres with whom they have links. Each of the better-known Chinese elders, Deng Xiaoping, Yang Shangkun, the president, and Chen Yun, the ailing economist, draws power from their own prestige and from their links to other, lesser-known revolutionaries, who also have extensive networks of influence in the party and in the People's Liberation Army.

The revolutionaries' political disputes turn on several axes, and their opinions are frequently inconsistent. Take Wang Zhen, a vice-president with a ruthless streak who declared not long ago that Mao Zedong Thought is "the most valuable spiritual asset of the Chinese nation". Wang is a believer in party control, and yet he has been one of the strongest advocates of economic reform and the establishment of special economic zones.

A second cause of confusion among middle-ranking officials is that it has been common for conservatives to allow the reformists to move too far, and then clamp down. It has also been common for the reformers to allow party conservatives to publicise their extreme views as a prelude to silencing them – according to bewildered party members, both of those strategies appear to be in motion at present.

Deng Liqun, a former propaganda chief who was voted out of office by party members at their 13th Congress three years ago, has been in fine form, censoring films and finding newspapers very willing to publish his sometimes bizarre opinions. Deng suggested in a recent speech that errant writers and intellectuals should be "strangled", which is the sort of comment his opponents would expect and, perhaps, hope that he would make.

Zhu Rongji, the former mayor of Shanghai and now a deputy prime minister, is hailed by most foreign diplomats as the great reformist hope. Zhu has been given the almost impossible task of overhauling state industry, which has forced him to raise the sensitive issue of bankruptcy and to talk to party elders about stock ownership. Younger Chinese officials believe that Zhu has been set up, and will soon take a fall.

It is clear that the influence of Deng Xiaoping has faded, for physical and political reasons. He is still the paramount leader, but was compromised by the "failure" of his two choices as party boss, Hu Yaobang and Zhao Ziyang, both of whom were dismissed.

The man generally identified as Deng's chief rival, Chen Yun, 86, the central planner who, strangely, took an early interest in environmental issues, is even less cognoscente. Wan Li, the liberal-minded head of the Chinese parliament and occasional tennis opponent of visiting dignitaries pre-1989, is seriously ill.

This game of Chinese roulette is likely to play itself out slowly, with a possible outcome that Yang Shangkun, the still robust president, and his friends and relatives in the military will gradually assert their control, leading the Communist Party farther down the road of mediocrity.

President Yang is another curious cross-breed of communist, who called in the troops two years ago, and now sees himself as something of an international statesman. Chinese familiar with Yang suggest that he will be either as pragmatic or as brutal as is necessary to secure his own position in the People's Republic.

Premadasa's critics lose

AN ATTEMPT to impeach Sri Lankan President Ranasinghe Premadasa has failed, his office said yesterday, Reuter reports from Colombo.

An impeachment motion submitted in August by the opposition and a group of rebel legislators from Mr Premadasa's ruling United National party was rejected by the speaker of parliament, the president's office said.

The speaker, Mr Haniffa Mohamed, told Mr Premadasa: "The resolution does not have the required number of valid signatures and.. accordingly the resolution will not be proceeded with." The motion, which had plunged Sri Lanka into a constitutional crisis, accused Mr Premadasa of abusing his powers and violating the constitution.

The speaker had considered the resolution but later said he would investigate complaints by some ruling party members that their signatures had been obtained illegally. The motion needed signatures from half of the 225 members of parliament to proceed.

Dissident legislators said earlier 122 government and opposition members had signed the motion.

Boat people stage protest

MORE THAN 10,000 boat people marched through Hong Kong's biggest camp for Vietnamese yesterday to protest against any plan to send them home by force, Reuter reports from Hong Kong.

With speculation sweeping the camps that forced deportation could start soon, boat people at the Whitehead camp chanted and punched the air, signalling they would fight any attempt to expel them from Hong Kong.

ANC backs easing of sanctions

By Patti Waldmeir in Johannesburg

SOUTH African anti-apartheid organisations have decided to call for the immediate lifting of sports, cultural, academic and travel sanctions against Pretoria, though economic sanctions should be be maintained until an interim government is formed to give blacks a share of power.

The decision, taken at a meeting of officials of the African National Congress, the Communist party and the largest trade union federation, Cosatu, must still be approved by the ANC's highest policy-making body, the national executive. But ANC officials said they did not expect opposition from the executive.

While deciding to ease their stance on so-called "people to people" sanctions, the ANC has recently stepped up its campaign to forestall international lending to Pretoria. ANC officials have issued thinly veiled threats that they might renege on foreign loans incurred by the present government, in an attempt to sabotage Pretoria's recent steps to return to capital markets.

The ANC has said it will drop its insistence on investment and loan bans only when an interim government – including the ruling National Party, the ANC and other black organisations – is in place.

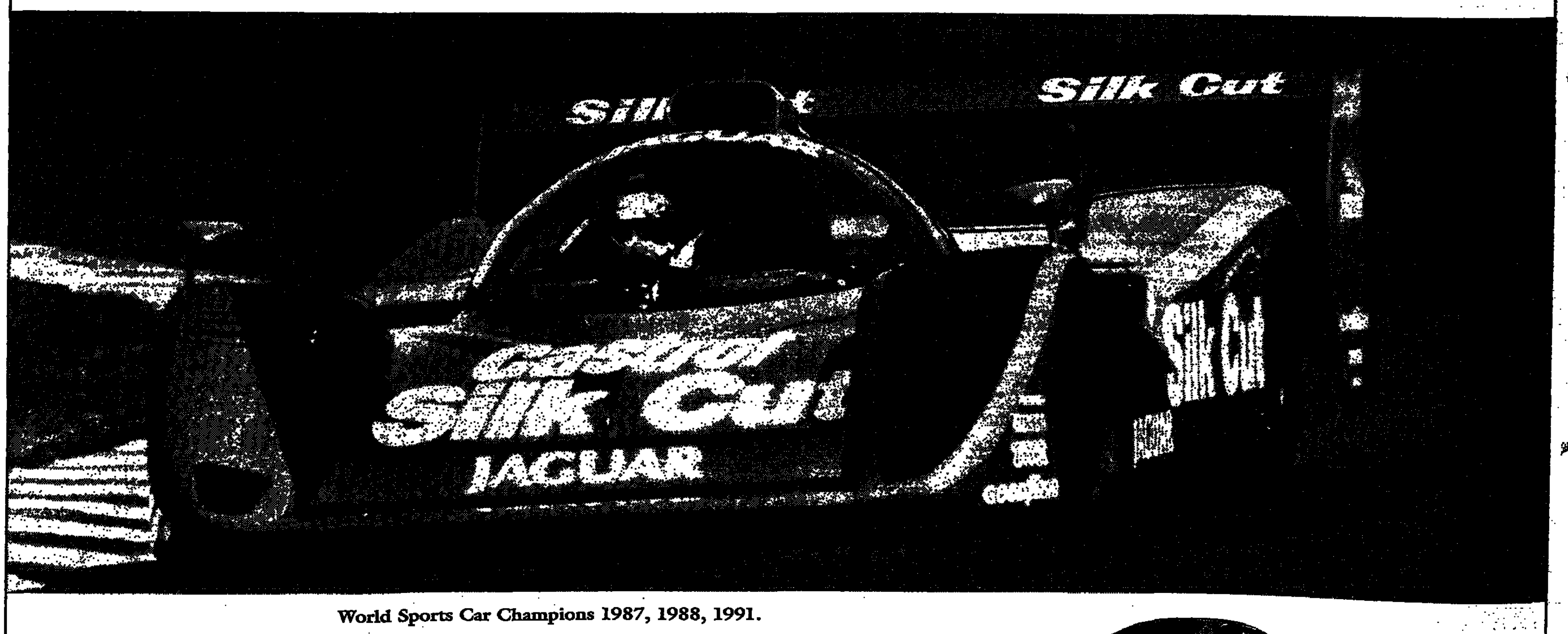
Sudan devalues currency

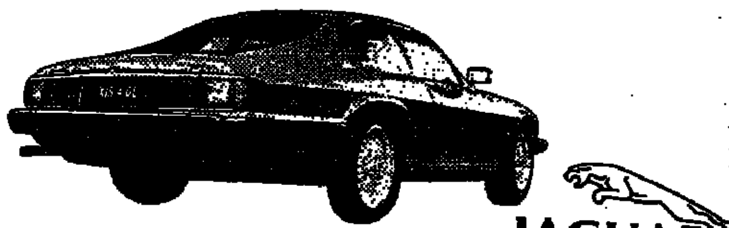
SUDAN HAS devalued its currency and scrapped subsidies on basic commodities, including sugar and fuel, Suna, the official news agency reported yesterday, Reuter reports from Khartoum.

It said the Sudanese pound had from Sunday been devalued to an official exchange rate of 15 to the US dollar. A previous two-tier structure of S£12.3 and S£4.5 to the dollar was abolished.

Suna quoted Colonel Salah al-din Karrar, the member of the 12-man ruling military council in charge of the economy, as saying the new rate would be used for government revenues, repayment of loans and grants, remittances by embassies and foreign organisations and customs payments by the private sector.

Subsidies on sugar and petroleum products would be lifted – the price of sugar has gone up by 75 per cent to S£7 per 500 grammes while petrol has been increased by 66 per cent to S£25 a gallon.





Bush consults business leaders over recovery

By George Graham in Washington

PRESIDENT George Bush met US business leaders yesterday to discuss how to produce a stronger recovery from the recession, amid increasing signs of government concern about the economy's weakness.

Mr Bush argued last week that the economy needed "a shot of confidence" but complained there was little the administration could do unilaterally other than "jawboning".

Yesterday's meeting was viewed by economists as an attempt to use this "jawboning" approach to encourage business confidence.

While the administration has interpreted recent economic statistics – such as last week's slight decline in the unemployment rate – as confirmation of its view that the economy is emerging from recession, it has also begun to swing its support behind Republican-sponsored legislative proposals intended to bolster recovery.

This growth package would include a cut in capital gains tax and tax credits for research and development. While the administration favours a cut in capital gains tax rates, White House officials yesterday raised questions about the timing of a cut.

Some administration officials fear a cut just before the opening of next year's election season might give political ammunition to charges of unfairness from the Democrat opposition.

Democrat efforts to boost the economy have focused on increasing domestic spending by transferring savings from the defence budget, following the perceived decline in the Soviet threat and the recent proposals by Mr Bush and President Mikhail Gorbachev to cut nuclear arsenals.

But Mr Leon Panetta, chairman of the House budget committee, urged Congress yesterday not to try to redraft next year's budget without considering a long-term plan to reduce the federal deficit.

Mr Panetta advocated a plan to save $1,000bn (£574.7bn) over 10 years, helping to reduce the deficit from 6.1 per cent of gross national product next year to less than 1 per cent of GNP by the end of the decade.

He warned that without radical cuts in spending US national debt would grow to $5,100bn, or more than 50 per cent of GNP, by the end of the decade.

The Panetta proposals include a 20 per cent reduction in government operating costs by cutting the number of departments from 14 to six – with savings he estimated at $15bn-$25bn over the decade – and cuts in domestic and benefit programmes. The bulk of savings would come, he said, from cuts of $200bn-$600bn in defence spending.

MPs reject plan to reinstate Aristide

By Canute James

THE political crisis in Haiti deepened yesterday when the country's parliament rejected proposals for the reinstatement of President Jean-Bertrand Aristide, overthrown in a coup d'etat last week.

The vote has further reduced the chances of a diplomatic solution to the crisis, and has made any return to office by Mr Aristide unlikely.

Mr Aristide took office last February on a wave of popular support from Haiti's majority poor, and without any structured party machinery.

Many MPs had been unhappy with his reluctance to form a coalition with any of the 12 parties represented in the assembly.

Parliament was expected to vote yesterday on the appointment of a provisional president as reports from Port-au-Prince indicated that thousands of citizens were fleeing the capital in fear of renewed violence.

The Haitian issue is due to be discussed again today by the Organisation of American States (OAS) following a weekend mission of eight foreign ministers to the country. The mission, which talked to military and political leaders and businessmen, was unsuccessful in efforts to have Mr Aristide reinstated.

Another top-level team left for Haiti yesterday.

Some OAS members – including Venezuela, Jamaica and Trinidad and Tobago – have said they will support military intervention under the auspices of a regional organisation.

The visit by the OAS team was followed by further indications of a division within the military. A broadcast by the army High Command stated Mr Aristide would not be allowed back under any condition. However, General Raoul Cedras, leader of the new junta, denied authorising the statement.

Iran-Contra prosecutors file charges

SPECIAL prosecutors investigating the 1985 Iran-Contra affair have filed criminal charges against a former senior State Department official, writes George Graham in Washington.

Mr Elliott Abrams, who was assistant secretary of state in charge of inter-American affairs at the time the Iran-Contra arms-for-hostages scandal broke out, will face two charges of withholding information from Congress.

Prosecutors contend that Mr Abrams concealed his knowledge of the network set up by Lt-Col Oliver North to finance the Nicaraguan Contra rebels with the proceeds from weapons sold to Iran.

A five-year investigation by Mr Lawrence Walsh, the independent special counsel appointed to investigate the Iran-Contra affair, has recently begun to produce charges against senior officials in the Central Intelligence Agency.

Carlos Menem: tough struggle

Minister believes battle for economic stability far from won

Argentina warned on inflation

MR Domingo Cavallo, Argentina's economy minister, has warned that inflation remains "far too high", stressing that the battle for economic stability is far from won, writes John Barham in Buenos Aires.

His warnings come even though Argentina is experiencing one of the lowest inflation periods in its recent history.

Mr Cavallo faces two crucial tests this week to prevent the planned reintroduction of index-linking wages to inflation. The government and the judiciary are locked in a constitutional dispute after the Supreme Court invoked its powers as an independent branch of government to award its members a 25 per cent wage increase.

The government has blocked the increase, arguing that if the justices get their way other sectors will be able to demand equally large increases.

Simultaneously, wage negotiations with the powerful metalworkers' union began yesterday. Employers are under intense pressure from rising foreign competition to resist inflationary wage increases. The government has warned companies to increase wages only in line with improvements in productivity.

Inflation must fall to international levels rapidly if Mr Cavallo's broader economic strategy is to work.

Although September's inflation rate of just 1.8 per cent was little more than August's increase of 1.3 per cent, prices have climbed 18.3 per cent since April, when Mr Cavallo tied the austral, Argentina's currency, to the US dollar and made it freely convertible.

The finances of Mr Carlos Menem's government are in good shape, if only because privatisation receipts are greater than expected, but the struggle against two other sources of inflation – high production costs and inefficient markets – is proving far tougher than expected.

Mr Cavallo needs quickly to overcome resistance to reforms of the rigid and inefficient transport system, labour market, public sector and financial industry. These burden the economy with about $8bn (£4.5bn) a year in excess operating costs.

The rigid retail system is also a key difficulty: retailers have increased prices of goods in shops by 18.3 per cent since April, even though the wholesale sale prices of the same products rose just 4.5 per cent in the period.

Mr Cavallo will require rising tax revenues to stabilise fragile finances and keep inflation under control. Diplomats note that inward foreign investments are urgently needed to spur the economic growth required for the minister's plans to succeed.

Smoker's suit reignites emotive debate

Nikki Tait on widespread implications of a long-running US product liability case

IN 1984 Rose Cipollone, a life-long smoker, died of cancer. Now, a full seven years later, the tobacco product liability suit which made her name famous is set to make its first appearance in the US Supreme Court.

Oral arguments in the case are scheduled to begin today, the day after the US's highest judicial authority reconvenes from its summer break. Analysts say a decision could be handed down as quickly as late-October or ruminations could continue until next summer; the favoured date is somewhere between the two, early in the new year.

But whenever the court makes its decision, there is little doubt its ruling will have significant implications for the emotive question of "smokers' suits". What the Supreme Court is being asked to determine is whether US federal law pre-empts state remedies or, to put it in the context of the Cipollone case, whether the presence of federally-mandated health warnings effectively prevents smokers from suing tobacco companies under state product liability laws.

It has been a long and tortuous legal road. Cipollone *v* Liggett et al started out when Mrs Cipollone was still alive and has been continued after her death by her husband, Antonio. It is probably the best known of the numerous tobacco industry liability cases because – at one stage – it appeared to be getting somewhere.

In 1988, after a four-month trial, a Newark-based jury awarded Mr Cipollone $400,000 (£230,000) on the grounds that the Liggett tobacco company had misrepresented the risks of smoking in its advertising for Chesterfield and L&M cigarettes. Although the jury found contributory negligence on Mrs Cipollone's part, this was the first verdict which had required a US cigarette manufacturer to compensate the family of a smoker who had died of cancer.

But in January 1990 the award was overturned by a federal appeals court, and a new trial was ordered.

The appeals court decided the initial decision had been unfair; the jury, it reasoned, had been allowed to consider Mrs Cipollone's smoking habits after 1966, when cigarette packets started to carry health warnings, but not the companies' post-1966 marketing practices.

Since then the question of whether warning labels protect manufacturers from claims post-1966 has come to dominate much of the debate, with legal conclusions mixed.

From a practical viewpoint the question is crucial; as the population gets older, the possible number of pre-1966 claims shrinks. So, considerable interest – and not a little anxiety – surrounds the forthcoming debate in Washington.

It is not confined to the tobacco industry. If warnings demanded by federal statute are deemed to protect a product from state liability laws, there could be wide-ranging implications. For example, might federal regulations prevent state liability suits against pesticide manufacturers?

The lobbies fall into two camps. There is some general industry support for the tobacco companies' position, while the anti-smoking activists are enlisting broad, populist themes.

"If the Supreme Court holds that the mere presence of a warning mandated by the federal government is enough to shield a product... it could make it far more difficult for people killed or injured by using various drugs, pesticides and other chemicals... to obtain compensation," Ash (Action on Smoking and Health), the anti-tobacco organisation, argued last week.

On the tobacco front, some Wall Street analysts believe the industry remains relatively well-placed. As one ratings analyst, reviewing the status of RJR Nabisco in the wake of last week's refinancing plan, put it: "The downside is limited and the upside quite considerable".

Should the Supreme Court decide in favour of the defendants, his argument runs, it would remove a sizeable litigation threat which has hung over the tobacco industry for years. Alternatively, if the court rules in the plaintiff's favour, the tobacco companies' lawyers can still resort to other defences which they have utilised skilfully in the past.

The anti-smoking lobby sees the matter in a different light. A pro-Cipollone decision, says Ash, could "persuade many attorneys who have been holding off filing cases against cigarette manufacturers to jump on the bandwagon".

Certainly, the fall-off in outstanding tobacco liability cases has been marked – from more than 150 at the peak to about 45 at present, according to the Tobacco Products Liability Project at Northeastern University School of Law.

Moreover, Ash contends, juries in other non-tobacco areas are increasingly willing to find defendants liable, where there is an argument for contributory negligence. In short, times have moved on.

US cautious over Soviet arms cuts

By George Graham

US officials and legislators responded cautiously yesterday to the Soviet Union's proposals to go beyond the nuclear arms cuts put forward 10 days ago by President George Bush.

White House officials said the proposals made by President Mikhail Gorbachev on Saturday represented "a substantive offer to consider", but that the Soviet leader's call for a summit meeting was premature.

"There are convergences between the two and there are differences between the two," a White House spokesman said yesterday. "We don't want to eliminate the atmosphere or the environment in which both sides are trying to be forthcoming and make unilateral decisions to reduce nuclear weapons."

Senator Sam Nunn, chairman of the Senate armed services committee, also urged caution in responding to Mr Gorbachev's proposals, which go beyond those of Mr Bush in urging a freeze on nuclear testing and broader cuts in strategic nuclear missiles.

"We cannot behave as if everything is going to be in the hands of this leadership from now on," he said.

US, India edge closer to solving copyright dispute

By David Housego in New Delhi

THE US and India edged closer yesterday to solving a dispute over intellectual property rights that has threatened to precipitate retaliatory US action.

Mrs Carla Hills, US trade representative, said in New Delhi she hoped the dispute over India's resistance to allowing product patents in the pharmaceutical industry could be resolved to both sides' satisfaction. The US administration has until November 26 to decide whether to take retaliatory action against India under the Special 301 provision of the US Trade Act.

Mrs Hills yesterday saw Mr P. Narasimha Rao, India's prime minister, and other ministers, who argued that recent trade and economic measures had considerably opened the Indian economy. The dispute over product patents is the last big remaining bone of contention between India and the US over trade and foreign investment issues involved in the Article 301 controversy.

Mrs Hills repeatedly denied Indian accusations that to allow product patents in the pharmaceutical industry would raise the price of drugs for the poor. "It is a false assertion," she told a business audience. She claimed research findings showed that allowing product patents cut costs and increased the choice of drugs available by encouraging competition.

Indian law, in an attempt to hold down prices for the poor, does not permit the registering of product payments in the areas of food, chemicals and pharmaceuticals. All that can be patented is the manufacturing process, for seven years rather than the normal 14.

The US argues the refusal to allow product patents robs drug companies of the fruits of their research. Senior ministers and officials are ready to change Indian law in the interests of broader commercial ties with the US. But they face strong opposition from the left, which sees a reversal of India's stand on intellectual property rights as damaging to the interests of the poor and as caving in to pressure from

Hills: repeated denials

multinationals.

Ahead of Mrs Hills' visit, 250 MPs called on the government to resist a reversal of Indian legislation on intellectual property rights.

By contrast, the government signalled its wish for expanded commercial ties with the US. Through the Reserve Bank of India (the central bank), it approved a more than $40m (£23m) investment by Kellogg to establish a joint venture breakfast cereals project. The venture is the largest of the seven foreign investment projects approved by the bank since liberalisation of the foreign investment regulations in July.

● China is preparing to join international copyright organisations, a move western diplomats said would help deflect international pressure, Reuter reports from Beijing.

The New China News Agency quoted Liu Gao, deputy director of State Administration for Copyrights, as saying China was preparing to join. It did not give a date for accession.

Although China's first copyright law went into effect on June 1, it has come under fierce international pressure to improve its record on intellectual property, particularly from the US.

The Bush administration in April cited China, along with India and Thailand, for allegedly violating intellectual property rights.

Nafta free trade talks reaching most critical stage

Meetings are likely to focus on three issues, including rules of origin, **Damian Fraser** reports

TRADE negotiations over the North American free trade agreement (Nafta) are reaching their most critical stage. In three weeks' time, on October 26, trade ministers from the US, Canada and Mexico will meet in Zacatecas, Mexico; if broad agreement on the issues is reached by then, officials could soon start writing the text of the agreement.

Mexico's President Carlos Salinas de Gortari, in an interview, said the negotiations were at the "most important stage, the most intense, the most difficult", but that he hoped an agreement would be reached early next year.

The talks in Zacatecas are likely to focus on three important areas: rules of origin, which determine what constitutes a North American good; dispute mechanism procedures; and the transitional period over which tariffs are phased out.

Without broad agreement on these areas, another ministerial meeting would be needed before beginning to write the text.

The three governments have already made progress on the question of rules of origin. Trade officials from the three countries have agreed that the large majority of goods will be considered "North American" if they undergo sufficient transformation in North America so that they change tariff classification, a principal known as "tariff jumping".

Thus, Mexican luggage made from Chinese leather with Taiwanese machinery would be considered North American, since the raw materials switched tariff classification in North America.

But in problem areas, the three countries will use a specified "percentage of regional content", derived by the value of regional materials plus local manufacturing costs as a percentage of total value, to determine whether a good is North American. The rules governing regional content would differ from product to product, but not from country to country.

Mr Salinas hinted he would accept a reasonably high local content rule governing rules of origin. As he said, "Mexico does not want to become a springboard for re-exporting to other markets, but there must be important processes of transformation of products here, so additional employment opportunities are being generated".

In the car sector, one of the most contentious to be negotiated, the big three US car negotiators are pushing for a regional content of 70-80 per cent, up from the 50 per cent that governs the current US-Canada trade agreement. This would penalise non-American car investment in Mexico, since Japanese and European companies tend to import large amounts of parts and materials from their home country.

Mr Shoichi Ameniya, head of Nissan Mexico, called the 70 per cent rule of origin "totally out the question", adding it would lead to a big drop in Japanese investment in Mexico.

Nissan is currently finishing a $1bn (£500m) car plant in Mexico. The Mexican government, in the case of the car sector, is likely to sympathise with this point of view.

Trade officials have said that tariffs on goods will be lifted in three stages; sectors where tariffs would be removed immediately; in the medium term (say, five years); and long term (10-15 years). Mr Herminio Blanco, head of the Mexican negotiating team, in an interview with the US newsletter Free Trade Advisory, said the reduction in tariffs need not be symmetrical.

"Perhaps it would be better (for) the US to go to zero on those tariffs where it is ready, and we are probably not...,while we may be ready to go to zero on other tariffs where the US is not ready."

Two weeks ago, when the three countries presented their first plans for eliminating tariffs, Mrs Carla Hills, US trade representative, indicated some 50 per cent of US industry should be protected for 10 years. The Mexicans, for their part, in turn would like to protect maize, rice and wheat for 15 years.

The negotiations over tariff reductions will be affected by progress in Gatt's Uruguay Round trade negotiations, particularly on the status of the Multi-Fibre Arrangement (MFA), which governs developing-country textile exports into the US and other developed countries. The US textile industry is unwilling to support Nafta until the future of the MFA, extended until the end of 1992, is finally resolved.

The Mexicans, for their part are determined to abolish the limits on the exports of the roughly 4,000 goods that enter the US under the GSP (Generalised System of Preferences).

At the moment, GSP products only enter the US tariff zero if the amounts exported are below a pre-set limit - a system, say the Mexicans, that punishes the successful exporters.

Mexicans are also keen to protect the banking sector from US competition for a few years at least. The Mexican banks are being privatised, and officials would like to give them time to consolidate.

Mexicans and Canadians are both unhappy about allowing "national" treatment of banks, since it would allow the US to operate freely in their countries, whereas in the US a Mexican or Canadian bank would only be able to operate in one state.

Despite these differences, Mexican trade officials privately say the talks are going well.

Mr Salinas said: "There has been a proper process of communication within the three [US, Canada, and Mexico] negotiating groups; they have made important advances" and that "some part of next year, hopefully the first part of next year," an agreement will be ready.

President Salinas: "Talks are at their most intense stage"

MEXICO has overhauled customs posts on the Nuevo Laredo border crossing with the US through which some 45 per cent of US-Mexican trade passes, in an attempt to end decades of corruption and contraband, Damian Fraser reports. Two-way trade with the US was worth $58.6bn (£33.6bn) in 1990.

The change was opposed by customs officials, who for the first time went on strike, cut off electricity and water to the new customs site, and shot two finance ministry officials carrying out the move, one of whom is critically ill.

The old customs posts, more than 30 streets from the border crossing, were characterised by "vice and corruption" and were damaging Mexico's trade with the US, the finance ministry said. The posts have now been moved to the border, and are thus able to keep tighter control over traffic. The process of checking goods entering Mexico has become automated, largely curbing the discretion and power of the customs officials.

Mr Pedro Aspe, Mexico's finance minster, described the customs overhaul as a "typical microeconomic change" that his ministry would implement in the next three years. The overhaul follows reform of Mexico's ports last June.

Japan trade insurance premiums to rise 30%

By Robert Thomson in Tokyo

JAPAN is likely to increase trade insurance premiums by about 30 per cent, in an attempt to cover growing losses suffered by Japanese companies in contracts with less-developed countries.

Ministry of International Trade and Industry (Miti) officials are discussing the premium plan with leading trading houses and trade associations. It is understood the 30 per cent increase will be announced in coming weeks.

"Companies have been making more and more claims for non-payment in deals in South America, Africa and eastern Europe, and we have no choice but to increase premiums. The situation is difficult this year because of extra losses suffered because of the Gulf War," an official from Miti said.

Payments to companies totalled Y1.98bn (£8.53m) last year, while the fund had an income of Y450m and recovered debts of Y400m, leaving a deficit sharply up from the Y400m deficit in 1989.

Exporters seeking cover in deals with developed countries pay about 0.25 per cent of annual contract value as a premium; for LDCs this is likely to be 1-2 per cent, depending on the country's payment record. Trading houses and long-term suppliers are the most frequent customers.

Miti said the payment increase would not especially disadvantage any trading partner, but be added to a country's existing rating.

Slump seen in east European steel consumption

ECONOMIC turmoil in the Soviet Union and eastern Europe will mean a 17 per cent slump in steel consumption there this year, International Iron and Steel Institute estimates show, Bernard Simon reports from Toronto.

Mr Lenhard Holschuh, IISI secretary-general, told the annual conference in Montreal that the drop in eastern European demand will account for four-fifths of the expected 40m tonne decline in 1991 worldwide steel consumption. The IISI says total demand will drop 5.2 per cent to 735m tonnes. Weak offtake in eastern Europe, North America, the UK and Scandinavia will be partly offset by peak consumption in Japan and Germany. Only a modest upturn is seen in the world steel market for the rest of this decade, with consumption reaching 790m tonnes in the year 2000.

Cuba's meningitis vaccine exports set to double

By Canute James in Kingston

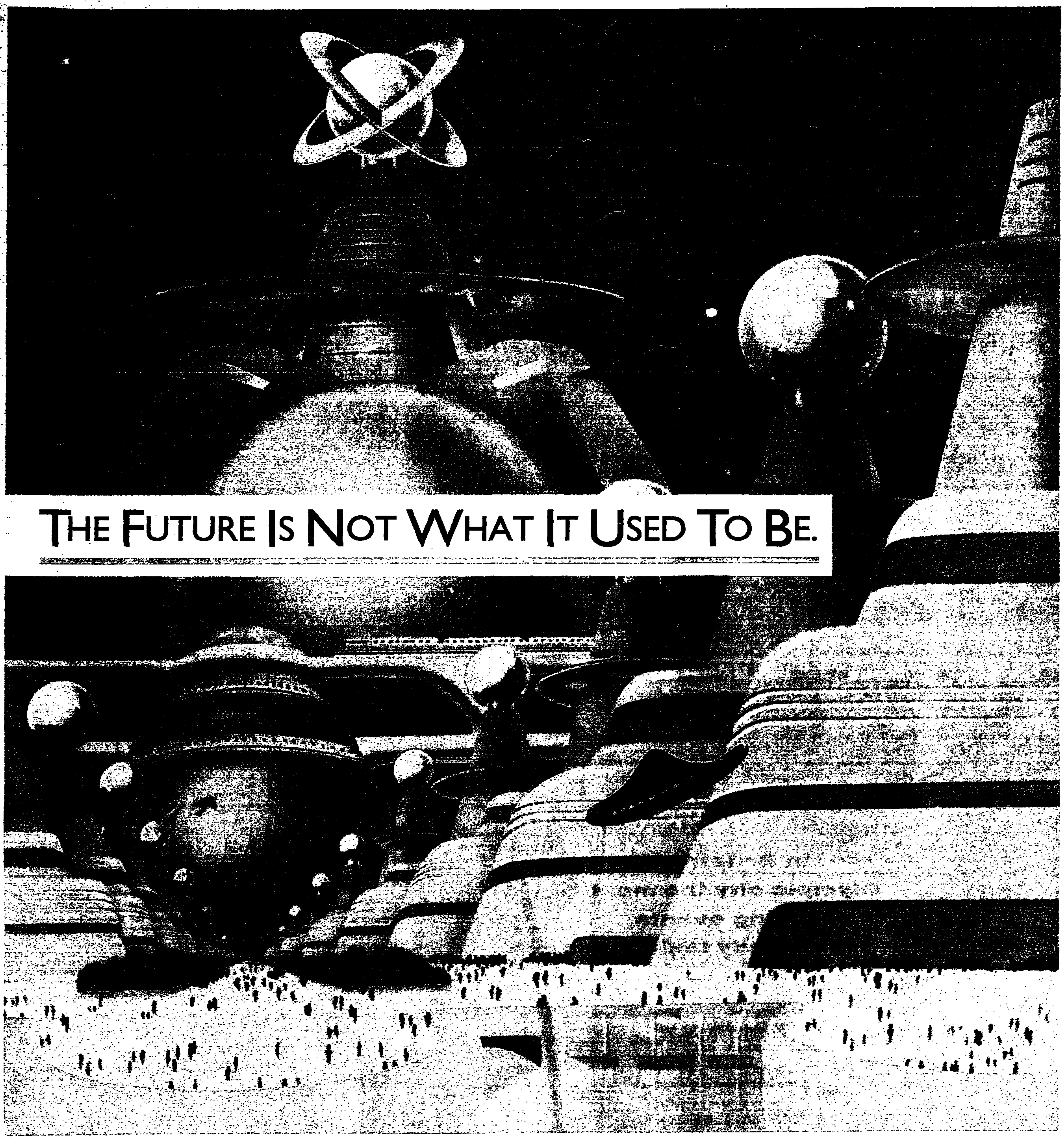
CUBA's growing export trade in vaccine against meningitis is expected to double to just over $160m (£92m) a year, following an agreement with Brazil to build a factory there to produce the substance.

The joint venture will allow the vaccine, previously exported from Cuba, to be produced at a lower cost. There is no indication of the cost of the plant and how the financing will be shared.

Cuba's earnings from this year's exports, with outstanding payments from last year, when Brazil imported $130m-worth of the vaccine, will be used to finance Cuba's investment in the new factory.

Cuban medical researchers are now believed to have been successful in producing a vaccine against meningitis B, a disease which has afflicted thousands of people in South American countries, mainly Brazil, Colombia, Uruguay, Paraguay, Argentina, Venezuela and Ecuador.

Vaccines against meningitis A and C were available, but the treatment for the B strain was elusive. Cuba will export 15m doses to Brazil this year, in exports worth about $80m. The plant will produce an average 75m doses a year, enough to meet current demand in South America. The cost will be much less than the $5.50 a dose for the Cuban-exported vaccine.



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UK NEWS

Advisers to Nissan UK face tax charges

By Kevin Done, Motor Industry Correspondent

TWO senior financial advisers to Nissan UK, the embattled British importer/distributor of Nissan vehicles, have been arrested and charged with conspiracy to cheat the Inland Revenue.

The charges are the first results of the dawn raid on Nissan UK (NUK) in June.

The Inland Revenue said yesterday: "This is not the end of the inquiry. The action taken relates to one aspect of the investigation, which is continuing."

Code-named Operation Bluebird, the raid was the largest search ever undertaken by the Inland Revenue involving 135 of its officers.

A total of 13 locations were searched, including the Worthing headquarters of NUK in West Sussex, southern England, the offices of some of its legal and financial advisers and the homes of some current and former directors.

The Inland Revenue said yesterday that Mr Brian Laventure, a partner in the Portsmouth office of Grant Thornton, and Mr Gerald Compton, a partner in Kidsons Impey, had been arrested and charged last week.

They appeared at Worthing magistrates' court and were released on £100,000 bail on condition that they continued to reside at home and surrendered their passports.

It is understood that the Sussex regional crime squad sought to interview a third person in connection with the Revenue inquiry but that he was abroad last week when officers visited his home.

Kidsons Impey, a medium-sized accountancy firm, has been the Nissan UK auditor since the company was formed to import and distribute Nissan (formerly Datsun) vehicles by Mr Octav Botnar at the end of 1971.

Grant Thornton, which is ranked in eighth place among UK accountancy firms, said it had acted as a personal tax adviser to both Mr Botnar and other current and former NUK directors, and had acted as a corporate tax adviser though not on routine compliance matters.

Mr Compton and Mr Laventure have been charged with conspiring to cheat the Inland Revenue by filing false stock relief claims for Datsun UK, the former name of Nissan UK, for the accounting periods ended July 31 1980 and the year ended July 31 1981 amounting to £9m and £5.5m.

The charges claimed specifically that the two financial advisers had conspired between March 19, 1980 and July 14, 1984 at Worthing and elsewhere:

- To bring forward the accounting date for Datsun UK from December 31, 1980 to July 31, 1980, "falsely representing" that the change had been done for commercial reasons unconnected to any tax liability, whereas "the sole or main benefit" of the change had been to increase Datsun's claim to stock relief, and
- Had caused the Inland Revenue to allow Datsun UK false stock relief claims for the two periods of around £9m and £5.5m respectively.

Mr Compton and Mr Laventure are to appear again in court in Worthing on January 15.

Heavyweights: some of Japan's top-ranked sumo wrestlers took time-off from training yesterday to face the cameras in London, where they are appearing at the Royal Albert Hall. They are preparing for one of the first sumo tournaments held outside Japan.

London awaits decision on Channel rail route

Urban renewal is the key issue guiding the high speed link, writes Vanessa Houlder

A DECISION by the UK government on the route of a high-speed railway line between London and the Channel tunnel is imminent.

Mr Malcolm Rifkind, the transport secretary, and Mr Michael Heseltine, the environment secretary, were said yesterday to be in agreement on the choice of route.

Since Mr Heseltine wants to stimulate development in the East London corridor, close to the big business development of Canary Wharf, this implies that the solution will involve a terminal at Stratford in east London.

Whatever the decision the debate about the Channel tunnel route has been increasingly influenced by the issue of urban renewal.

If a terminal is built in Stratford, down-river from the capital's heart, it would be a shot in the arm for the regeneration of east London. It would tie in with ambitious proposals to create a 30-mile stretch of development in the East London corridor to relieve the pressure on the home counties west of London.

Those who favour building the terminal at London King's Cross, argue that it is crucial to bring passengers to the heart of London if it is to retain its position as Europe's leading business centre.

"Pound for pound, there will be more to be gained for London's economy if the terminal is integrated into the Central Business District," says Mr Stuart Robinson, head of planning at Hillier Parker, chartered surveyors.

The prospect of routing the tunnel through east London to Stratford raises a question mark over the development of the Kings Cross terminal, which is one of the biggest inner-city development sites in Europe.

The 134 acre site is set to be transformed into offices for about 30,000 workers, a 26 acre park and housing. British Rail awarded the project to the London Regeneration Consortium, made up of Rosehaugh, Stanhope and NFC, the freight company in 1988.

Some commentators believe that the development is unlikely to go ahead on this scale, if Kings Cross is not chosen as the Channel Tunnel terminal.

"If you are going to let 6m-9m sq ft you need an extra dimension," says Hillier Parker's Stuart Robinson.

The developers, however, claim to be confident. Rosehaugh believes the passenger terminal will end up at Kings Cross, even if the rail link is routed through Stratford. But in any case, it believes that King's Cross would be a viable development site, without the passenger terminal.

"The two have never been linked as far as we are concerned," says Mr Graham Johnson, a director of Rosehaugh.

The timing of the development depends on the state of London's office market, the completion of the British Rail's own construction works and the planning process. Rosehaugh estimates that work will start half way through the decade.

If Stratford wins the terminal, the benefits will be felt over a large, relatively undeveloped area of London. The office developments on the Isle of Dogs, such as Canary Wharf, would particularly benefit, as they are linked by Jubilee line to Stratford.

The clearest boost would be for a scheme drawn up by the London Borough of Newham, which centres on a 300 acre site around Stratford railway station. Newham has proposed a mixture of offices, warehouses, leisure, a shopping centre hotels and conference centres, which it believes could generate 11,000 – 40,000 jobs over 15 years.

Even without the terminal, Stratford is due to benefit from new infrastructure, such as road and bridge improvements and the extension of the Jubilee Line which should be in place by 1996 and the Cross Rail link, which is due to be built by the end of the century. "The area doesn't live or die by the Channel link alone," says Mr Roger Norman of King & Co, chartered surveyors. "Stratford has quite a lot going for it, as it is."

Newham, however, feels that the Channel tunnel terminus would play a vital part in its development plans. "The only thing we need to happen is some key project to raise the image of Stratford," says Mr Ian Sim of Newham's planning department. "We feel that the International Passenger Station is the only project that is likely to do that."

BRITAIN IN BRIEF

Pay deal agreed at Vauxhall

A six-week deadlock in pay talks at Vauxhall, the UK subsidiary of General Motors, has been overcome following a decision by shop stewards to agree to a link between the negotiations and separate discussions on changes in working practices.

Pay talks are expected to resume shortly following acceptance of the link by workforce representatives on the advice of national union officials.

Vauxhall employees had previously resisted the company's insistence that a national pay deal covering 9,000 manual workers could not be concluded unless agreement was reached on working practice and wage bargaining reforms.

Bleak survey on economy

There is no sign of an upturn in business confidence in the last three months of the year, according to a survey from the Finance Houses Association, which represents the instalment credit industry.

The 43 members of the association supply £13bn of business credit and £11bn of consumer credit, which includes 11m credit cards with turnover in excess of £2.25bn.

Surveyed in September, 70 per cent of the FHA's membership said that consumer lending was static or falling.

Names sue underwriter

Mr Richard Outhwaite, a prominent underwriter at the Lloyd's of London insurance market, was accused in the High Court yesterday of "single-handed negligence" at the opening of the biggest single legal action in the history of the market.

Mr Anthony Boswood QC, acting on behalf of 987 loss-making Names, the individuals who back underwiting in the market with their own capital, told the court: "Never in the commercial history of the City of London has so much money been lost by the single-handed negligence of one man."

The Names are suing RHM Outhwaite (Underwriting Agencies), the managing agency which handles the affairs of 317/661, and 81 members' agents who funnelled them to the syndicate. Syndicate 317/661 made losses in excess of $456m (£263m) as a result of exposure to court awards to US victims of asbestosis. Mr Outhwaite is defending the action.

Roux stands by invoice

Mr Oliver Roux, former Guinness finance director, said a £1,95m invoice sent to Guinness by a Swiss purchaser of its shares during the 1986 takeover battle for Distillers had been truthfully and honestly submitted at his request.

He said he had had no reason to doubt that the invoice, from a company named Rudani, truly reflected financial services for which Guinness had agreed to pay.

Mr Roux, a witness, was being cross-examined by Mr Roger Seelig, former corporate finance director at Morgan Grenfell, Guinness's principal merchant bank during the takeover. Mr Seelig is charged with conspiring to contravene the 1958 Prevention of Fraud (Investments) Act. He faces another charge under that act and two of false accounting. He has pleaded not guilty.

Few pits 'to be sold'

Only 14 of British Coal's 61 pits have been shortlisted as fit for privatisation, according to an article in today's International Coal Report (ICR). This would mean 40,000 job losses in the industry, leaving a workforce of only 11,000, compared with over 200,000 eight years ago, ICR says.

ICR says the list of pits was leaked to the trade magazine from a paper sent at the end of September to the Department of Energy by NM Rothschild, the merchant bank advising the government on the privatisation of British Coal.

Party accuses health chief

Labour has accused Mr Duncan Nichol, chief executive of the state-run National Health Service (NHS), of acting for the Tory party and debasing the traditionally apolitical standards of the civil service by attacking opposition policies in a newspaper interview.

Mr Robin Cook, Labour's health spokesman, has written to Sir Robin Butler, head of the home civil service, asking if Mr Nichol's comments fitted with the civil servant's code of impartiality.

His letter followed Mr Nichol's comments in the Daily Mail which derided Labour's warning that the NHS was being lined up for privatisation "The idea is so unbelievable I don't even give it house room," Mr Nichol is reported as saying.

New training at shipyard

Swan Hunter, the Tyneside shipbuilder, has launched a standards-based traineeship, superceding the traditional shipyard apprenticeship. The company, which last took on apprentices in the mid-1980s, is this month seeking 12 recruits for the new programme, drawn up by a management/union working party.

US plant to close with loss of 686 Scottish jobs

By James Buxton

SCOTLAND'S electronics industry suffered a severe blow yesterday when the US computer manufacturer Unisys announced that it is to close its plant at Livingston, West Lothian, early next year with the loss of 686 jobs.

Unisys, which has made heavy losses worldwide for the past two years, said the closure was part of a programme announced in July aimed at making cost savings of $800m and shedding 10,000 jobs worldwide. It also said that the products made at the Livingston plant were being superceded by new technology.

The closure raised fears that other US-owned plants may shed staff or close because of the current shake-out in the US computer industry. Unisys is one of the biggest employers in Livingston.

Unisys, formed from the merger in 1986 of Burroughs and Sperry and burdened with debt ever since, has already announced the closure of a plant making mainframe computers at Clear Lake, Iowa, and of a printed circuit board plant at Salt Lake City, Utah.

The Livingston plant was opened in 1980 to make low and medium speed cheque processing equipment, receipt printers and credit card reading devices.

Production and R & D for products made at Livingston is now to be centred on Unisys plants at Villers Ecales, France, and in Plymouth, Michigan, US, which already make and design them.

The announcement by Unisys comes after several years of strong expansion by the Scottish electronics industry. Several new plants have been established by US and Japanese companies and employment last year reached a record of 47,000, more than half of them in foreign-owned plants.

But output was static last year after growing at an average of 14.5 per cent a year since 1980.

Unisys said in July that its programme to cut costs, involving 10,000 job losses, consolidation of plants, a slimming of its product range and $1.2bn of special charges against second-quarter earnings would restore it to profitability later this year after suffering heavy losses for the past two years.

Technology, Page 12

Major rallies Tories on eve of conference

By Ivo Dawnay

MR JOHN Major signalled the key themes for the annual Tory conference last night by stressing that Conservatives had stuck to their policies while their Labour opponents had "turned like sour milk."

In an eve-of-conference speech to 200 party agents in Blackpool, the prime minister *drew strongly on events in* eastern Europe, claiming the tide of history was ebbing away from socialism, as former communist societies embraced Conservative values.

"They want the power to choose. They want the right to own," he said.

Drawing attention to Labour's policy changes in recent years, he stressed: "Our party is confident in its values and proud of its history. We do not have to hide our past or pretend it never existed.

"Socialism has turned like sour milk. Conservatism runs true to its beliefs." His audience at a pre-conference reception also heard Mr Major urge on the constituency agents to work harder to get his message across to the electorate.

Coming on the anniversary of the UK's entry into the European Exchange Rate Mechanism, Mr Major emphasised that the government had shown its determination to bring down inflation and interest rates. The country was now heading out of recession, he said.

He went on to stress his own role by claiming that the government was showing leadership both at home and abroad, in clear reference to his part in the flurry of diplomatic activ*ity both before and after the* attempted coup in the Soviet Union.

In an oblique reference to recent Labour attacks on the Tories' National Health Service reforms, he added: "All our opponents do is try to muddy the waters and mislead the electorate about the economy or the health service – anything they can."

Earlier, Mr Chris Patten, the party chairman, told a Blackpool press conference that the Conservatives would be stressing their positive agenda for the 1990s. Among the messages intended to come to the fore was the view that the Conservatives were "incomparably better suited to manage the economy than the Labour Party."

The four-day conference will be attended by nearly 10,000 representatives and observers, hearing debate on some 18 topics, culminating in the leader's speech on Friday.

British Airways launches own political campaign

By Paul Betts, Aerospace Correspondent

BRITISH Airways, under pressure from competition at Heathrow airport, London, and the slump in the airline business, has launched a political campaign to defend its position as one of the world's biggest international carriers.

The airline has drawn up a 40-page manifesto detailing what it argues the government should do "to ensure Britain – and British Airways – preserves its leading role in the world civil aviation industry."

Copies of the manifesto will be distributed at this week's Conservative Party conference. BA said it will also be sent to every candidate from all parties when the general election is called.

It will also be mailed to members of the House of Lords and European Parliament. The manifesto demands:

- development of an adequate air transport infrastructure in Europe;
- negotiation by the European Community of multilateral air transport agreements with countries outside the EC;
- maintenance of the present system of allocating take-off and landing times at congested airports but reforming it to provide better access for new entrants.

"Many people in positions of power and influence still take a parochial view of the nation's airline industry," said Lord King, BA's chairman. "They fail to recognise that competition in this business is on a global basis – it does not begin and end at Land's End and the White Cliffs of Dover," he added.

Thatcher may break ranks over Europe

How long will the deposed premier stay out of the limelight ? **Philip Stephens** reports

IF THEY stick to the script Mr John Major and Mrs Margaret Thatcher will step on to the platform in Blackpool's Winter Gardens at the exactly the same moment tomorrow.

It should be impossible for the watching media to judge with certainty whether it is the prime minister past or present who wins the warmest reception from the last Conservative party conference before the general election.

But the fact of such a precisely-timed entrance - negotiated down to the last detail over the past three months - is testimony to the acute anxiety which surrounds Mrs Thatcher's appearance before the party faithful.

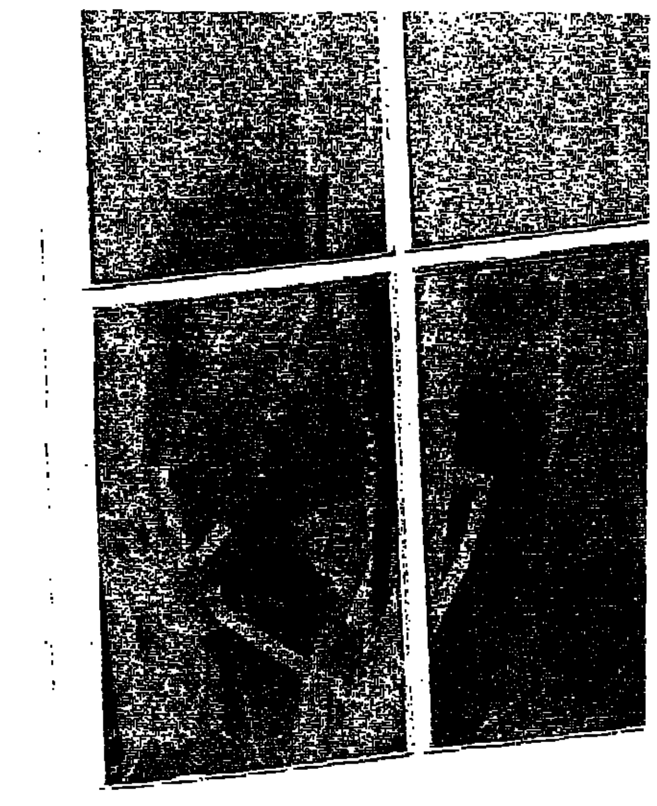
Last year she stood on the platform in Bournemouth as prime minister: defiant and determined in the midst of a mounting crisis in her government. As always, the conference delegates loved her. They had no time for the fainthearts. A month later she was gone, forced out of Downing Street by a collective loss of nerve among Conservative MPs.

Since then the party has warmed to Mr Major. He has won enthusiastic receptions at gatherings in Wales, Scotland and Southport.

But among many delegates there will still be a feeling of betrayal, a suspicion that Mrs Thatcher was deserted by colleagues cast in tinfoil rather than iron. As one Tory MP put it: "She never lost an election. And they love her".

She will relish the applause. After several months at the start of the year during which she retreated into disbelieving depression, she has begun to rediscover her old energy. She intends to be active, a figure on the world stage.

She still resents the way she was treated, sometimes drawing less than credible parallels with more dramatic events elsewhere. After the abortive coup against president Mikhail Gorbachev last month she remarked that: "The worst thing, when these occasions occur, is the realisation that some of those whom you have trusted were most prominent in your betrayal".



Ashley Ashwood

Curtain-call: Thatcher is keeping an eye on events

In private she is said to be critical of a number of the policies pursued by her successor. She believes it was wrong to abolish the poll tax, constraints on public spending should not have been relaxed. Interest rates should have been brought down more boldly - in 1 or 2-point rather than ½-point stages - to pull the economy out of recession.

Friends say that she finds it intensely frustrating to watch from the sidelines the tumultuous changes across the world. She thinks that the western allies were much too soft on President Saddam Hussein of Iraq. The war should have been pursued until he was deposed. The Iraqi leader should have been brought to trial.

She felt that before the Soviet coup, the G7 nations did not do enough to support President Gorbachev. She thinks now that they should be playing a more decisive role in preventing the anarchic break-up of the Soviet Union. She has called for more direct intervention in Yugoslavia on the side of Croatia, she has developed her longstanding ideas on the need for a new transatlantic trading community.

The Thatcher Foundation will be designed to give a permanent platform for such ideas. In the last two months her fundraising efforts have taken her to Japan, Hong Kong, the Gulf, and the US. In between she has found time for visits to China, Poland and the Soviet Union.

Once established the foundation will aim to promote "the widest possible acceptance of the principles of economic and political freedom, democracy, the rule of law and strong defence".

As its prospectus notes, Mrs Thatcher is determined also that ways should be found of "strengthening and deepening links between the countries of Western Europe and the new democracies in the East and the Soviet Union".

It is that sentence that holds the seeds of an open confrontation with her successor. Mrs Thatcher fell from power more than anything else because of her passionate opposition to European integration. It drove Mr Michael Heseltine, Mr Nigel Lawson and Sir Geoffrey Howe from office. It sparked Mr Heseltine's leadership challenge.

She has not changed her mind. If anything the collapse of communism in Eastern Europe and the break-up of the Soviet Union has persuaded her that the vision of Europe she set out in her now infamous Bruges speech is more, not less relevant.

The present European Community of 12 is insular, protectionist, and, above all, moving along the road to federalism. Mrs Thatcher wants the loose confederation of sovereign states - stretching from the Atlantic to the Urals - which was foreshadowed in Bruges. She is more determined than ever that the authority, the sovereignty of the Westminster parliament should not be eroded.

It is a point she has made several times in during lectures to US audiences over the past few months. It is one that might well persuade her to break publicly with Mr Major just months before a general election.

Mr Major has been successful in laying the foundations for a new Conservative consensus on Europe during the intergovernmental conferences on political and economic union which are due to conclude in Maastricht in December.

Like his predecessor he opposes vigorously the open transfer of power to Community institutions proposed by some of Britain's partners in the talks on political union. Mr Major would veto any treaty changes which handed over control of foreign and defence policy.

In the talks on EMU, however, the prime minister has worked hard to win the compromise which now looks likely to emerge from Maastricht. In essence, Britain would agree to moves towards a single currency but it would reserve the right for a future Parliament to keep remain outside such a union. It is a compromise that Mr Major is confident will win the overwhelming backing of his parliamentary colleagues.

But not Mrs Thatcher. She believes that any deal which involves changes to the Treaty of Rome will bind Britain into eventual acceptance of a single currency. More importantly she views the process of economic union as a cloak for federalism.

Once Britain ceded control of key economic levers to Brussels, it would effectively be handing parliamentary sovereignty to Brussels. Tax and public spending policies would be outside the government's control. National defence would be compromised.

She believes that Mr Major should veto any treaty changes. Those countries who are committed to a single currency could go ahead outside the framework of the Treaty of Rome.

It is an issue that Mrs Thatcher feels passionately about. For her the decisions taken in Maastricht will be the most important facing Britain since it joined the Community. If necessary she is willing to oppose publicly the deal now being contemplated by her successor and to call for a national referendum on the issue.

She will not get much support among the colleagues at Westminster who deposed her a year ago. But then Mrs Thatcher intends to appeal directly to the people.

Credit figures dent recovery

By Rachel Johnson, Economics Staff

THE ECONOMIC recovery will be held in check by the reluctance of consumers to take on new credit, official figures suggested yesterday.

The Central Statistical Office announced a decrease of £26m in the amount outstanding on credit agreements to consumers in August – an unexpectedly-large contraction after an increase in July of £187m. The markets had expected a rise of around £210m. In August, the total amount of new credit taken out by consumers was £3.9bn, down from £4.3bn in July.

The CSO also announced that retail sales volumes in August fell by a revised 1.2 per cent, after its provisional estimate of a 1.4 per cent drop.

Yesterday's figures prevented the government from launching the Conservative conference with an upbeat piece of official data to underline their confidence that the economy is on the mend.

The figures were seized on by the opposition as "disappointing". Mr Gordon Brown, the Labour's industry spokesman, said the figures undermined government forecasts of a strong recovery under way. He called on the prime minister to announce measures to increase industrial investment at the conference.

The Conservatives can round off their conference with a better figure – Friday's release of the retail prices index for September. This is due to show inflation rising at an annual rate of 4 per cent, a sharp fall from August's 4.7 per cent.

Mr Simon Briscoe, economist at Greenwell Montagu, said the data showed that "despite the supposed return of consumer confidence, consumers are not confident enough to take on credit."

Although this comparison is distorted by the rush to beat the rise in value added tax announced in the budget, economists said the figures reflected the impact of rising unemployment on consumption and the lagging effect of cuts in interest rates on borrowing. The figures did not raise hopes of an early cut in interest rates. Mr Briscoe said a cut this week would appear "overtly political", given that a general election is not to be held until next year.

TECHNOLOGY

Bar-codes make the headlines

The last UK national newspapers to be printed without bar-codes fell into line last month at the end of a successful muscle-flexing campaign by Tesco, the supermarket retailer.

The Financial Times joined the other quality papers in September when it began printing a 15-digit code at the bottom left-hand side of the front page.

The move comes after what many circulation directors perceive to be rapidly increasing pressure from retailers to print bar-codes or face a refusal to stock the papers.

Tesco says it has not taken its threat that far. Nevertheless, it has been a leading advocate of bar-codes and has lobbied newspapers hard to bring them into line with other items on sale in its stores.

Paul Nutter, Tesco's assistant bar-code manager, estimates that using bar-code readers at the check-out is about 10 per cent faster than keying in the price of papers by hand.

However, the company's main reason for insisting on bar-codes is automated stock control. The unique code allows each store to keep precise tabs on how many papers are sold, at what time and when new quantities need to be ordered.

The Evening Standard has been printing bar-codes since the beginning of the year, but with its own aims in mind. It scans every unsold, returned copy of the paper. It can use the statistics to calculate how many copies of each edition of the paper were sold in its distribution regions, within one day of publication.

Most tabloids had bar-codes – on their back page – long before the quality papers. The first, on the Daily Mirror, appeared in June 1989.

Broadsheets resisted longer, partly because they are forced to sacrifice valuable front page editorial space. Shop assistants would otherwise have to waste time unfolding each paper to find the bar-code.

But few readers appear to have been disturbed by bar-codes on their newspapers. It seems that they are becoming a universally accepted symbol on retail goods.

Andrew Jack

James Buxton on Scotland's electronics industry in the wake of 700 redundancies at Unisys

Scotch mist in Silicon Glen

Yesterday's announcement that Unisys, the US computer company, is to close its plant at Livingston in Scotland next year making nearly 700 people redundant is the worst news Silicon Glen, as the Scottish electronics industry is called, has had for several years.

The plant is the victim of a worldwide retrenchment by Unisys which is shedding 10,000 jobs. But it was at risk because demand for the equipment it makes for handling cheques and paper in the banking industry is declining as paperless transactions take over.

But for Scotland it raises old questions about the permanence of investments by multinationals in Silicon Glen. It will be seen by some as a harbinger of further job losses and closures as the US computer industry goes through turmoil, with companies such as Digital Equipment and National Semiconductor reporting falling profits and making restructuring provisions.

Scotland is particularly vulnerable because about 40 per cent of the 47,000 people who worked in Silicon Glen last year were employed by US companies. Some 80 per cent of the foreign-owned electronics plants in Scotland are US-owned.

A sustained run of expansion, beginning in 1987, had already almost come to an end in Silicon Glen. Its total output last year was static after 10 years of growing at an average of 14 per cent a year.

For example Compaq, the US personal computer company which grew hugely in the late 1980s, filled up the superb site at Erskine near Glasgow on which it only began manufacturing in January 1988. A year ago it doubled the size of its plant to 530,000 square feet. But there is no talk of further expansion.

"The current quarter will be very busy and and so will the next quarter. Further ahead than that I can't say," says Ronnie Gilfillan at the plant. "We have to be very careful about keeping the headcount under control and holding down costs. We don't want to get ahead of ourselves."

About 25 miles away at Irving, Conner Peripherals, the fast-growing US disk drive maker, employs 420 people in a plant which started from scratch only in June 1990. But it says it is waiting for signs of an upturn in the European computer market before going ahead with building a purpose-built plant which it said early last year could eventually employ 1,500 people.

In Edinburgh GEC Ferranti, the British defence electronics company, is shedding 657 people from its Scottish workforce of 4,800 in a further wave of redundancies and early retirement. Two years ago it employed nearly 7,000.

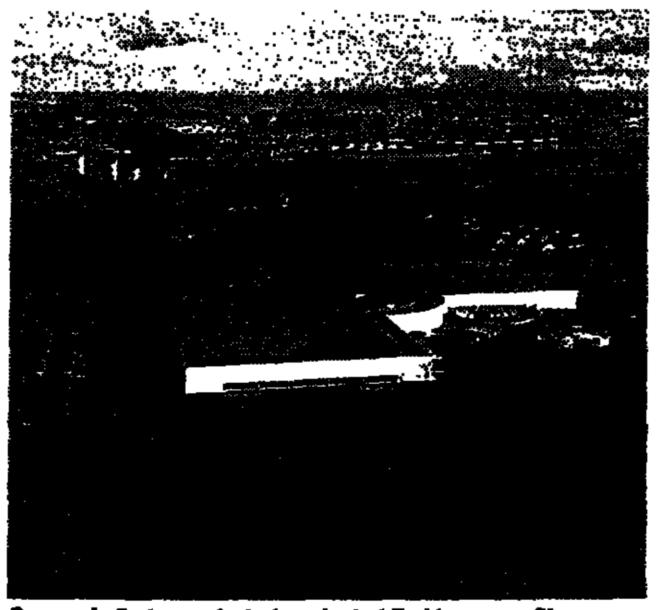
While the defence electronics industry, which made up nearly 25 per cent of the 47,000 strong workforce of the Scottish electronics industry in 1990, is a victim of the ending of the cold war, data processing equipment makers and their suppliers are facing flattening demand in European and overseas markets.

But until last August there had been no big closures of foreign-owned plants since the ailing Wang shut its Stirling facility in mid-1989. (Compaq took it over as a repair and spares operation and now employs slightly more people there than the 240 who Wang made redundant.)

However in August the US company Seagate closed its disk drive repair plant at East Kilbride with the loss of 220 jobs. On the same day Rodime, a disk drive maker, put its manufacturing operations, which had been moved to Singapore, into receivership, making 70 people redundant at Glenrothes.

Rodime was that rare thing – a Scottish-based company which had spun out of a multinational (Burroughs, the forerunner of Unisys). It produced the world's first 3.5-inch disk drive. But it never succeeded in manufacturing successfully and had not made an annual profit since 1985.

Compaq was only one of a new wave of large companies setting up plants in Scotland in the late 1980s, adding to an industry which already had most of the main US electronics companies, led by International Business Machines at Greenock which is this year celebrating its 40th anniversary. Inward investment projects announced by electronics companies totalled £52.3m in 1988-89, £72m in 1989-90 and £50m in 1990-91.



Compaq's first manufacturing plant at Erskine, near Glasgow

Only last year Sun Microsystems, the US workstation maker, opened a plant at Linlithgow near Edinburgh and Motorola is building a large facility at Easter Inch, West Lothian, to make mobile telecommunication equipment. Although most new investment is from the US, whose companies accounted for 40 per cent of employment in Silicon Glen in 1989, Japanese companies have begun arriving in greater numbers: JVC has a plant making televisions and computer monitors at East Kilbride and Oki set up a printer plant in Cumbernauld.

The original equipment manufacturers' (OEMs) plants have been matched by a string of smaller operations established by US and Far Eastern component makers, anxious to get into the EC before the completion of the single market in 1992. The range of products available in Silicon Glen is probably greater than ever.

The government encouraged these companies to locate in Scotland with grants and other incentives. In the mid-1980s the Scottish Development Agency (SDA) believed that if enough multinationals set up operations in Scotland a state of "critical mass" would be achieved: start-up companies would be formed by executives spinning off from the multinationals and an indigenous Scottish components industry would grow on the back of orders from the multinationals.

But spin-offs have been very rare (a recent exception is the four companies formed by managers spinning off from the Livingston plant of the US company Burr Brown), while a 1988 survey showed that only 15 per cent of the Scottish electronics industry's inputs were supplied from Scotland.

Only a few Scottish-based electronics companies manufacture on any scale: they include Prestwick Circuits (publicly quoted) and Exacta (unlisted) in printed circuit boards, and Mimtec (owned by the privately-owned Murray International) in personal computer assembly and satellite receivers. In 1988 some 39 of the 50 Scottish-based companies employed fewer than 100 people.

Ex-SDA staff admit now that the critical mass theory was probably a fallacy: branch manufacturing plants do not usually employ people who know enough about the whole business to spin off, while product designers and purchasing directors based in the US or the Far East usually need strong reasons for specifying components which happen to be made close to the Scottish plant.

David Simpson, who returned to Scotland a few years ago after a successful career with electronics companies in the US, believes that the Scottish branch plants of multinationals are at risk in any shake-out in the US because most of them lack research and development operations.

By this yardstick one of the strongest Scottish plants is NCR whose facility at Dundee is responsible for the design and marketing as well as production of NCR's automated teller machines, in which it is the world leader. Another plant which carries out significant R&D is Hewlett-Packard at South Queensferry operating in telecommunications.

In the data processing sector Digital's plant at Ayr, which produces workstations and personal computers, as well as integrated circuits, recently developed, built and marketed a successful new workstation product. But in many other plants R&D may not amount to more than adapting products for different markets.

Alastair Macpherson, who formerly ran the SDA's electronics division before setting up his own electronics consultancy, says that US companies are vulnerable as PCs increasingly become a commodity product and as OEMs gradually lose their grip through proprietary operating systems. They may not be able to continue charging premium prices for their products in the face of low-cost Far Eastern competition and could find their elaborate structures hard to rationalise.

If Macpherson's analysis is right there may not be great deal Scotland can do about it. "The obstacle to finding a remedy for these problems is that the decisions on what happens in Scottish plants are not usually taken in Scotland," he says.

Getting to grips with security

By Alan Cane

Human nature demands that rule-breakers are seen as more fun than rule-makers. When a hacker breaks into a computer system and causes havoc it makes headlines; secure computer systems rarely excite the same attention.

In some ways this is a pity, because computer security is one of those dull topics which is going to claim progressively more of senior managers' time and energy as computers become dispersed through organisations.

Computer systems are feeble things at the best of times, prone to collapse when asked to do anything very complicated and apt to lose valuable information at the press of a keystroke. Add threats from a determined hacker and it is easy to see why managers have sleepless nights worrying about the integrity of their company data.

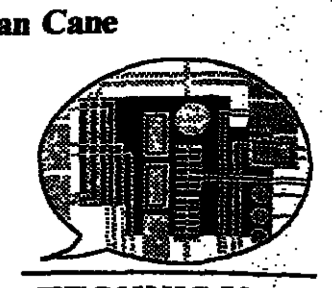
What is clearly needed is a set of standard security measures that can be used easily by business computer users, each with its own "Kitemark" of confidence.

As the European Security Forum puts it: "Such a scheme could be of substantial benefit to commercial organisations. Users would have a common and authoritative yardstick for assessing the security of IT products and systems; and IT suppliers would be encouraged to improve the security features of their products and systems by having a common standard to work to."

The European Security Forum is a lobby of Europe-based companies including, for example, BP of the UK and RWE of Germany, co-ordinated by the management consultancy Coopers & Lybrand.

There has been some progress in the direction of standard security measures, but it has been slow. In 1983 the US Department of Defence issued the "Orange Book", a set of protocols which defined levels of security and how they could be achieved. It was of limited use to commercial users, however, because of its predominantly military orientation.

Six years later, the UK, Germany, the Netherlands and France agreed to collaborate in the "Itsec initiative", an



TECHNICALLY SPEAKING

attempt to develop security evaluation criteria that could be applied to both government and commercial computing. At the time, it raised a small cloud of complaints from US computer suppliers who feared it could be used as a form of trade barrier.

The initiative has now been taken over by the European Commission, which is anxious to extend it to the whole Community.

Itsec, however, falls short of what is needed. Alan Stanley of Coopers & Lybrand says that, on the basis of a canvass of Forum members, the criteria do not meet commercial users' needs.

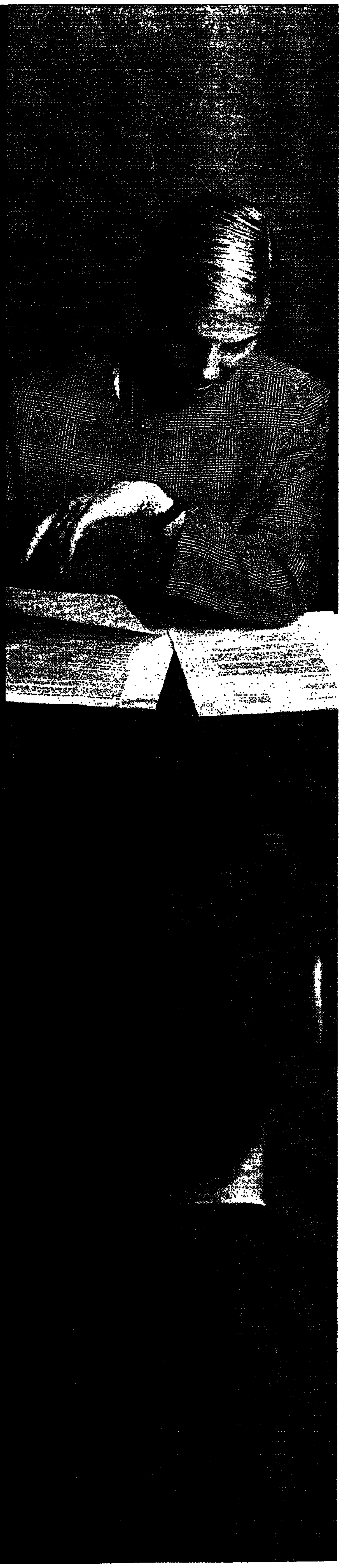
The initiative was government sponsored and carried out by individuals with a background of military security. As a result, the Itsec initiative is a paler shade of orange rather than a distinctively commercial hue.

It is, Forum members think, hard to grapple with. It is overly wordy, imprecise and poorly structured where it should be easy to understand, clearly documented and supported by appropriate training and software.

And human nature being what it is, Itsec could be ignored. The result would be increased costs for users, because of a plethora of non-standard solutions, while Europe will lose impetus in one of the few areas of IT where it has taken a sensible initiative.

Europe's computer users are starting to find their voice, as evidenced by their attempts to sway the Commission on the recent draft directive on software protection. On security, they will have to shout loud and strong if they are to bend the rule to their own needs.

When was the last time a business meeting ended on time?



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MANAGEMENT: The Growing Business

Tailor-made for home delivery by mail order

By Charles Batchelor

Over the past 10 years, James Meade, a former major in the Coldstream Guards, has sold high class shirts initially from his home in Fulham, then from a railway arch in Brixton and, most recently, from a 20,000 square foot warehouse in Andover, Hampshire.

At first sight these are unusual and unprepossessing locations for a company seeking to exploit the upmarket image of Jermyn Street tailoring, though at considerably less than Jermyn Street prices. Meade's success – sales of nearly £3m in 1990-91 – was the result of his decision to sell by mail-order.

His 60,000 customers and the further 140,000 people he regularly targets get their impression of Meade from his newspaper advertisements and his glossy mailings and not from a swanky location in the heart of London's West End.

Meade's decision to use mail-order meant he could keep costs to a minimum in the early vulnerable years. Many other small firms have discovered that mail-order gives them a great deal of operational freedom when funds and management time are at a premium.

This appears to contrast markedly with the malaise which has affected many of the large British mail-order companies. Although 20m people still spend £4bn a year on mail-order purchases, competition from conventional retailers reduced its share of the total retail market from 3.5 per cent in 1987 to 3 per cent in 1989.

Small firms differ in using mail-order simply as a means of distributing the goods that they themselves manufacture, rather than as a business in itself. And while most large mail-order companies produce thick catalogues offering a broad range of products, small firms tend to supply one or two products or at most a small range of specialist items.

In contrast with the generally downmarket image of mail-order, small companies frequently produce more specialised upmarket products. "It must not be a product you can buy on every high street," says James Meade. "There needs to be enough margin in the product to make it worthwhile to process the order. There must also be the potential for repeat sales because the cost of advertising is so high."

Modern packaging technology and improvements in the service offered by both the Royal Mail and private couriers means there are few products which cannot be sold by mail-order. Michelle Berrydale-Johnson sends her Berrydales tofu-based ice cream around the country by mail with only the occasional sticky mishap.

Berrydale-Johnson says she is happy to supply customers in far-flung places, many of whom are allergic to dairy products, though the relatively low value of each order means it is expensive both for her and the customer.

But if the product is sufficiently costly and meets the other criteria there are considerable advantages to be gained from selling by mail-order.

- A company can avoid the considerable cost of buying or renting retail property. Cosmetics a la Carte has two shops – in London's Covent Garden and Belgravia – but it also has 13 independent make-up artists demonstrating and taking orders for its products around the country.

CALC, which has seven full-time staff and annual sales of £250,000 (a quarter through mail-order) considered opening extra retail outlets and franchising its formula on the lines of Body Shop, the successful health and beauty chain, but rejected this as being too expensive. It now takes orders through its self-employed make-up artists or directly on the phone and sends off the parcel on the same day, says Lynne Sanders, a joint founder.

- The business can sell to customers who would otherwise live too far away to visit its premises. Charlotte Smallman, who runs two shops, Frog Hollow and Frog Frolics, selling toys, gifts and party items, in west London, says she could not survive on the basis of passing trade alone.

"We realised there was a huge untapped market," she says. "We now have customers throughout the UK and all over the world."

- Mail-order cuts out the intermediaries such as distributors and retailers who would otherwise take a slice of profits. It also ensures a healthy cash-flow if the supplier insists on payment with the order.
- It allows the small business owner to choose where he or she wants to locate the business to fit in with personal preference or family commitments. Meg Rivers at first thought that she would sell her home-made fruit cakes through delicatessens but frequent sales trips took her away from her three children.

A consultant recommended that she concentrate on building up sales by mail-order and Meg Rivers Cakes now sells £130,000 worth of fruit cakes a year from its bakery in Tysoe, near Stratford upon Avon.

Rivers believes that by a more professional use of direct marketing techniques she can increase sales to £250,000-£300,000. She is looking to employ a marketing consultant to double the size of her present mailing list of 7,500 people. 30 per cent of whom have actually bought her cakes.

James Mead: swaps his mailing list

Running a successful mail-order business depends to a large degree on how professionally the company can market itself to prospective customers. Since there is no shop-front the business must rely on advertising and on mail shots.

Biopharm (UK) supplies customers around the world with leeches and biochemical products from its base at Hendy, Dyfed. Roy Sawyer, managing director, has built up lists of clients and potential clients over the years from regular visits to international medical conferences.

His company now regularly keeps in touch with 400 hospitals around the world. Biopharm mails leaflets explaining new products and enclosing a reply-paid coupon for its catalogue.

Some companies in very specialised areas may be able to build up a mailing list from their existing customers and from professional contacts but others, like Meg Rivers Cakes, may need to expand their market. This can be achieved by swapping, renting or buying mailing lists from companies in related fields or from professional list brokers.

James Meade swaps his mailing list with companies which sell fishing tackle and porcelain. Buying, or more usually renting a list (for once-only use), becomes expensive with a list of UK customers costing between £55 and £120 per 1,000 names, according to Mardev, a list broker.

Once a company has established a mailing list it will need to devote a considerable effort to "cleaning" it, removing the names of people who never buy or who change addresses.

And once a company starts to build up a mailing list it must start to take account of issues such as the Mail Preference Service, which allows people to have their names removed from lists, and the Data Protection Act, which grants access to personal information on data-bases.

Although mail-order and direct mail marketing can be an effective way of doing business, they do impose costs and demands on a small business. James Meade spends large sums on advertising and calculates that his total marketing costs are 30 per cent of his turnover. "It is a constant effort to maintain our mailing list," he comments.

Operating by mail-order also means that the company does not have direct contact with its customers. For many, though, this does not appear to be a major problem. Women are quite happy to discuss and take advice about the most suitable cosmetics over the telephone, says Lynne Sanders.

The proliferation of courier services has reduced the business customer's dependence on the post office but mail-order businesses are still acutely aware of their vulnerability to a postal strike.

Perhaps the biggest drawback of mail-order is at the same time its great attraction – the low barrier to entry. "It is so easy for people to copy your idea," says Meade. "You need to create barriers by building up your volume and your list of names and addresses and by streamlining your operations to reduce the cost of processing orders. That is hard, though."

Useful reading. Marketing without Frontiers. A Guide to International Direct Marketing. Royal Mail International. 52 Grosvenor Gardens, London SW1W 0AA. 172 pages. Free. Do-It-Yourself Advertising by Roy Brewer. Kogan Page. 124 pages. £7.99.

Scanning the horizon

Charles Batchelor on the need for planning

Only a quarter of business owners plan the future of their company for more than 12 months ahead, according to a survey of owner-managed businesses by accountants Touche Ross. And even those businesses that do rarely commit their plans to paper or identify any action that needs to be taken.

There is clearly considerable scope for many businesses to improve the usefulness and effectiveness of their planning procedures, the authors concluded. Twenty-five companies took part in the survey. Eighty-five per cent had turnover of less than £10m and 76 per cent were more than 10 years old.

Widely differing views were found on the meaning of the term "business planning". Forty per cent of those surveyed, mainly smaller businesses, produced short-term budget forecasts only. Other, larger firms, took a longer term view and considered wider issues.

Less than half the companies surveyed considered that Europe was relevant to their business and only 36 per cent identified the single European market as an issue in their planning process.

Touche Ross recommended greater formality in drawing up business plans because:

- It means all aspects are considered.
- It can help create a team effort.
- It avoids the dangers of inconsistency since plans may otherwise change on an almost daily basis depending on whim and short-term circumstances.

Ninety-two per cent of the companies surveyed said they used forward planning to set budgets for the year though only 36 per cent said they documented their planning. Only 24 per cent documented their planning beyond one year.

Nearly three-quarters said that the owner's personal needs were addressed in the planning process. It is essential for the success of the owner-managed business that the desires of the owners and the direction of the business are compatible, the survey noted.

Readers' Survey, Business Planning. 16 pages. £5. From Steve Blundell, Touche Ross. Tel 071 936 3000.

In brief...

■ Nearly one third of small firms in Britain are happy to stay at their present size; one fifth want to grow to a specific size; while a further fifth want to expand indefinitely. This was the finding of a National Westminster Bank survey of nearly 1,700 businesses, 85 per cent of which had sales of less than £750,000.

Almost 40 per cent of the smallest firms – those with fewer than four employees – want to remain at their present size while less than one in three have any expansion plans. Independence and self-expression were more common motivations for their owners than a desire to make money.

More than half the firms with 15 or more employees were seeking to grow. Less than one in five of these firms wanted to stay the same size.

Nearly 15 per cent of the business owners polled wanted to sell their business or merge with another enterprise, a trend which rises with size.

■ A free business performance check-up for Britain's small and medium-sized owner-managed companies is being offered by accountants Grant Thornton. Applicants will be expected to fill in a detailed questionnaire about their business. The check will include a comparison of the business's key financial ratios with those of its sector and a review of the management information system and management structures.

Contact Philippa Harding, Grant Thornton, Grant Thornton House, Melton Street, Euston Square, London NW1. Tel 071 383 5621.

■ Middle and senior managers involved in developing small businesses in 13 developing countries are taking part in courses aimed to help them promote enterprise at Durham University Business School (DUBS).

Twenty-seven participants, of whom 16 are women, are taking part in the two 10-week courses, one of which focuses on the special needs of women in business.

A participant on one of last year's courses at the school has since made progress in turning auditors into small business counsellors in Vanuatu in the South Pacific, DUBS said.

■ Small and medium-sized companies in the building and civil engineering sectors should be able to qualify for BS5750, a widely-adopted quality assurance standard, in a little over 12 months, under a new training scheme launched by the Construction Industry Training Board (CITB).

The scheme comprises half and full-day introductory courses, costing from £50 plus VAT, on how to understand quality management systems through to a one-year series of practical workshops and advisory days. Participants will be required to join quality clubs of up to 15 members to share their experiences. The cost is £1,395 plus VAT.

Contact CITB, 24 West Smithfield, London EC1A 9JA. Tel 071 489 1662.

■ The Department of Industry will hold a roadshow in London on October 15 aimed at publicising the advantages of its Enterprise Initiative for travel agency businesses.

The initiative meets half the cost of management consultancy help to small firms. The roadshow will enable firms to have an initial discussion with DTI staff and representatives from two consultancies specialising in the travel business, about any problems they may have in the fields of marketing, business planning, financial and management information systems and quality.

The roadshow will be held at RSA, 8 John Adam Street (off the Strand) between 2pm and 8pm. No appointment is needed.

■ Business stationery is an expensive overhead, particularly if the company fails to provide its printer with all the information it is required by law to include on letters and invoices.

All business letters and order forms must include the precise company name, its registered number, the address of its registered office and the place of registration. Invoices must also include the VAT registration number, accountants Moores Rowland advise in their latest Newsletter.

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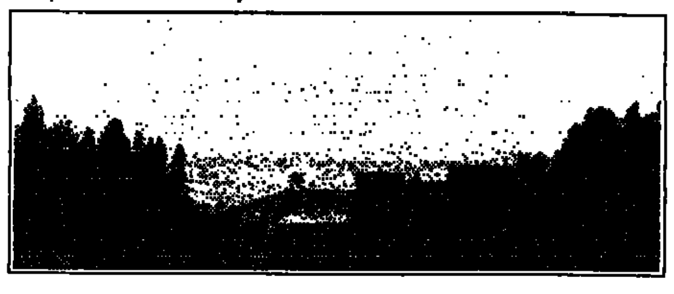

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The FT proposes to publish this survey on
November 14th 1991

With signs that the UK recession is coming to an end and that economic recovery is on its way The Financial Times will take an in-depth look at the problems that this will create and the areas which will require special attention to ensure a company's survival. If you want to reach the estimated 1 million readers in 160 countries worldwide who will read this survey, please contact Sara Mason on 071 873 3349 or Fax 071 873 3064

FINANCIAL TIMES
EUROPE'S BUSINESS NEWSPAPER

Dance Umbrella Gala

SADLER'S WELLS

As a prelude to the next four weeks of activity under the Dance Umbrella, a fund-raising gala on Sunday night offered a mass of good intentions and some intermittently good dancing and choreography. The evening was notable in bringing Scottish Ballet for a long-overdue return to London, and for involving two other major troupes: Rambert and London Contemporary Dance.

It has to be said, though, that any evening which begins with LCDT in part of *Rikud* must prove a vexation to the spirit. The piece is sadistic, brutalising its cast in dress (men and woman alike wear charcoal frocks and thunderous boots) and in skill (the dancers stamp and race about like hyper-active tots), while the choreography (Liat Dror and Nir Ben Gal) commits similar mayhem on the Shostakovich piano quintet.

Scottish Ballet was burdened with something no less tedious and unflattering: Jiri Kylian's *Forgotten Land*. A prime example of Kylian's "Angst by numbers" choreography, it begins, of course, with the cast facing the back-cloth, and then involving themselves in torso-wrenching duets where anguish is heavily applied to Britten's Sinfonia da requiem (well played by the Purcell orchestra under Richard Honner).

The dancers of both companies looked fine; they showed a dedication over and above any call of duty in dealing with these tiresome exercises.

Before the excerpt from *Roughcut* with which Rambert Dance Company closed the evening, we were offered the usual bran-tub selection of variously welcome items. There were two sets of brilliantly tapping feet. Shona Harper provided bravura clog-dancing, finishing with a cascade of beats that grew faster and dizzyingly faster. Tobias Tak tapped with a feathery skill, brushing in phrases of steps with the lightest, fleetest feet, and was accompanied by an admirable pianist, Maurice Horhut. Ashley Page's new duet for himself and Ann de Vos set classical ideas against the chaos of rock music. An over-long incident by Bill T Jones with Arthur Aviles was inexplicable on any terms save those of self-indulgence.

The truest and most rewarding matter of the evening came with another male duet – part of Laurie Booth's *Spatial Decay II*. In this, Booth and Russell Maliphant are formidably matched. Movement curves and flashes and poises, is exchanged, answered and reshaped, the images having a calligraphic intensity and vitality of form. It is choreography and dancing born of a clear, powerful vision , and expressed on bodies of rare technical and psychic sensitivity. It demands to be seen. (Booth and Maliphant will be on view during the Umbrella season in a new piece). It demands to be filmed. It made the evening worthwhile.

Clement Crisp

Punishment without Revenge?

THE PLACE, WC1

I was first thunderstruck by this great play last year, when the Gate Theatre gave it in its first English-language performances. The author is Lope de Vega, the Spanish contemporary of Shakespeare and one of the finest flowers of Spanish baroque art. When he wrote it, in 1632, he was 69; he wrote it at the end of his career.

It enthrals on several levels. The plot is riveting, the language thrilling, the moral dilemmas acutely shown. The characters see themselves in context of God, nature and the social system. As one character says, the stage is a mirror, and this court of Ferrara, where the action occurs, brilliantly reflects the wide world. The translation, by Gwynne Edwards, is new. It differs in many important details (especially versification) from that heard at the Gate, avoids the latter's inconsistencies, and is quite as successful at communicating the fresh intensity of Lope's language.

The libertine Duke of Ferrara marries for political reasons; he still wants his bastard son Federico, the apple of his eye, to inherit. But his young new wife Cassandra and Federico fall reluctantly in love, and their flame is fanned by his rude neglect of her and his doting trust in Federico. He leaves the realm in their hands and departs for the wars. When he returns, he is a reformed man (he has met the Pope), but his good intentions come too late.

When he discovers their adultery, he determines that they must die. He means this, however, to be not a cuckold's revenge but the law's punishment; and he so manipulates events that the deaths are decided and committed by others.

The characters, in speaking of the paradoxes of their situation, use the full armoury of Renaissance thought. The rich similes and metaphors that thicken at emotional climaxes are not there for prettiness's sake, but to illustrate the refined, intelligent workings of the characters' minds under pressure. Federico, in first telling Cassandra of his love, talks of how it has deprived him of both God and self: "I am deprived of God, because you are my being." Then, in the final scenes, the language becomes more stark. Certain similes, however, beam out. "My will is in turmoil," says the Duke "like a torrent freezing ... in winter."

And this is merely to skim the cream of this masterwork. It seems to me imperative that one of our leading theatres take up this play and make it more widely known here. In the meantime, I again congratulate the Actors' Touring Company and its director Ceri Sherlock for presenting another little-known gem of European drama.

I cannot, however, commend Sherlock's direction or the ATC performance. No actor shows any sense of the fire, colour and music of the lines. Vocal registers are narrow, dynamics are muted, gestures inhibited. The actors specialise *in inaudible pianissimi, and a* dreadfully English repression colours everything grey.

Alastair Macaulay

'Ingleside', 1963, by Richard Diebenkorn

An artist who walks alone

Richard Diebenkorn is one of the great figures of post war American painting with a very real claim, Willem de Kooning notwithstanding, to being the best of them. Yet he is little known outside the US since he seldom shows abroad. The Venice Biennale of 1978, occasional mixed exhibitions and, in London, but two dealers' shows in nearly 30 years (the last in 1973) is about the sum of it. The select retrospective of his work at the Whitechapel Gallery (Whitechapel High Street E1, until December 1, then on to Madrid and Frankfurt: sponsored by Skidmore, Owings & Merrill and Phoenix Electrical) is therefore of real interest and importance.

Even to American criticism, never notably reluctant to cherish its own, he has yet to be acknowledged at his true level. The reasons are hardly obscure. Diebenkorn is not yet 70 and is therefore seen as one of abstract expressionism's second wave. More important, he has always remained the outsider. Familiar he may have been with the likes of Motherwell and Baziotes, Still and Kline, but any such familiarity was bred at the cultural distance the West Coast still maintains from the East. In short, although an abstract expressionist of consummate and precocious sophistication, he was never a member of The School of New York. Such distinctions, once set, are remarkably resilient.

To cap it all, in the mid 1950s he shifted from abstraction to figuration – landscape, still life, figures in interiors, portraits and always back to the landscape, space and light of suburban San Francisco and the Bay. He then returned to abstraction through the long, *slow processes of formal analysis*, which he achieved by the late 1960s, and, in the monumental *Ocean Park* series, has continued with ever since. The opposition between the abstract and the figurative was ever more apparent than real but, to paraphrase Jeeves, such in-and-out running does upset the Book.

But Diebenkorn has never been anything less than his own man. Expressionist on the one hand, formalist on the other, he has always been deep and serious in his consideration of modernism. We never sense in his own work anything of slack or easy indulgence or histrionic, but always an emotional detachment and intelligent formal control.

The paradox is that as with all true art, such conspicuous absence of self-indulgence is the mark of a true authority and individuality as an artist. In his earlier work the practical influence of Baziotes, early Rothko and, most of all, of Arshile Gorky, is clear enough. In the early 1950s we can detect something of Poliakof, perhaps, and then, as the figurative takes over, rather more of Milton Avery. Clearest of all by the 1960s there is the acknowledgment of the enormous, all but overwhelming example of Matisse. And yet the artist remains true to himself in work that is uniquely and manifestly his own.

It is all of a piece, the product of the same unifying, albeit developing sensibility. The point of any proper retrospective is not that it should be exhaustive but comprehensive. It should represent the career in principle, that its apparent changes and contradictions may be resolved into a coherent whole. So it is here that through all the phases and changes in the work, both of form and content, certain qualities remain constant. The line, free and cursive at the outset remains as swift, firm and decisive as ever across the surface, *for all that it is now emphatically straight and rectilinear*. The paint too, though successively thin and thick and now again more light and transparent in its handling, has never been anything but richly subtle and effective, both in its working of the physical surface of the canvas, and in its formal statement of the imagery, abstract and figurative alike.

It is in this last respect that the work displays its most remarkable consistency. The emphatic horizontal, with its inescapeable intimation of landscape, is ever present, evident as much in the earliest, circa 1950, as in the latest abstraction, an Ocean Park, of 1985. There too is the vertical that depends from it, giving the composition its classical stability. These two elements of composition lie naturally on the surface; but then there is a third, the diagonal, to speed eye and imagination, away and deep into the pictorial space. Such tricks of emphasis – horizontal, vertical or diagonal – may appear in particular cases as barely more than hints within the composition overall.

All come together no less in the landscapes, interiors and figure paintings of Diebenkorn's mid career, that build upon Matisse with so fresh an engagement. Successive planes across the top of the kitchen sink, or across the flat lap of a seated girl, take us into a deep space that is landscape in all but name. The convoluted water-pipe, the legs so discreetly crossed, establish an ambiguous yet active perspective. And yet blank, square fields of colour, that may as well be sky or tree or wall behind the figure, at once close off the space to bring the eye back to the flat surface of the painting. Two paintings of 1967, each of a seated woman, rest in essence quite as abstract as any of the overtly abstract, flattened *Ocean Parks* that they immediately precede and so clearly prefigure. Such *is the truly contradictory* nature of a beautiful and intriguing exhibition.

William Packer

Schubert and Weill

SYMPHONY HALL, BIRMINGHAM

A lot of other people have already told you about the acoustic triumph of the new Symphony Hall, and of course they are right. I encountered it for the first time on Saturday, in one of Simon Rattle's chancier programmes with his City of Birmingham Symphony Orchestra: Schubert's Ninth, the "Great" C major, followed by acrid Kurt Weill music-theatre.

For Schubert the famous acoustic doors above the platform were opened, bringing new resonance-cavities into play. Did that explain why the eight 'celli and the (mere) quartet of double basses car*ried their due weight so well?* Their underpinning was firm, often uncommonly lyrical, always substantial, but the music it carried was never submerged. In this hall, as everybody reports, orchestral sound has both live immediacy and real-life depth, no less warmth than clarity.

Rattle gave us a confident, even-tempered account of the score. A decisive start, slightly quicker than usual, for a coolly reasoned Allegro; then a fluent Andante (though the oboe's imagination wasn't stretched) and a rattling Scherzo, its line-endings delivered like crisp QEDs.

In the unstoppable Finale Rattle turned enough of the hurtling string-music into *mezza voce* Mendelssohn to remove any sense of rising desperation. It sounded beautiful, as far as possible from romantic Expressionism or indeed post-Expressionist Weill.

For the Brecht-Weill *Mahagonny-Songspiel*, preceded by excerpts from *Happy End*, the *acoustic doors were shut – the* better, presumably, to secure a bright, up-front tone. But the "authentic" original combos were up on the platform with the singers, and saxes and raunchy brass make fierce competition. In his *Happy End* songs Benjamin Luxon was driven to indistinguishable shouts, and Elise Ross spoke as much of "Surabaya Johnny" as she sang. Since she was in good voice, it seemed a waste.

The *Mahagonny-Songspiel* came in the original German (except where Brecht slipped into his own curious English). In the dark, the translations in the programme were unreadable; and though "staging" the piece is always a problem Stephen Langridge's production – well-intentioned, not at all silly – was unreadable too. This cheerfully cynical piece is about the temptations of capitalism: I *think* Langridge meant his version to be about shiny Christmas gifts from the West seducing and then disappointing modern East Europeans, but one couldn't be sure. The designs were unappetising beyond the call of duty. The earlier singers were joined here by Ameral Gunson, Damon Evans, John Graham-Hall and Nicholas Folwell, who all made excellent impressions in difficult circumstances.

David Murray

Giulini's Verdi

ROYAL FESTIVAL HALL

For more than three decades Carlo Maria Giulini's collaborations with the Philharmonia Orchestra and Chorus on the Verdi Requiem have figured among London's greatest musical treasures. On Sunday the conductor, orchestra and chorus came together for the same purpose, assembling for the occasion an interesting quartet of young soloists. This time, however, the experience aroused mixed feelings – admiration for the prowess of the executants mingled with a new regret that the fire seems to gone out of the conductor's music-making.

It was a Requiem of embers, some of them warmly glowing, rather than flames. A man in his late 70s may be expected to spread the music out spaciously, at leisurely tempos: the problem with Sunday's performance was not slowness but ponderousness. In the movements of fire and brimstone the choral singing (well prepared and confident as ever) expanded to the limits of the hall's capacity, yet at the same time one sensed that the boundaries of the conductor's dramatic vision had contracted, even shrunk. The temptation to draw parallels with sounds and effects in *Forza*, *Don Carlos* and *Aida* was unusually small; the scent and heat of the theatre seemed far removed from this tame reading.

Many of the unique qualities remained: beautifully lyrical string and wind playing, their accompanying phrases wrapped close around the voices; full-toned but never hard-edged or deafening brass; an ability to "breathe" with the singers. For those who never heard Giulini's Verdi Requiem at its peak, this concert will have afforded a noble experience. The soloists, not ideally balanced as a team, were the big-voiced, potentially superb dramatic soprano Sharon Sweet (a sometimes careless musician); the "slimline" but (after a nervous start) promising mezzo Petra Malakova; the tenor Vinson Cole, tenderly affecting in *mezza voce*, overparted at climaxes; and the bass Carlo Colombara. It was the last-listed who provided the evening's most memorable moments – to hear a young Italian *basso cantante* in the classic mould, grand, dignified and powerful, has become an unfamiliar pleasure.

Max Loppert

A Bright Light Shining

THE BUSH THEATRE

A Bright Light Shining is David Ashton's first full length play. It is funny, improbable, and overlong.

Ten years ago, in a small Scottish village, Agnes had a miracle vision; an inundation of pilgrims swamped the community and swelled the locals' pockets. Agnes took her newly-sainted talents to America, but renounced her vision and has stayed away ever since. Ten years later she returns home and reveals that the vision was a hoax stage-managed by her boyfriend Peter to fill a gap in the miracle market.

There, waiting for her are Peter, a sharp, sardonic inn keeper and his brother George, a curt, fumbling postman full of useless trivia. Peter lives in uneasy equilibrium with Dooley, an Irish vagrant too late for the rush of pilgrims, a hopelessly disappointed believer. But Agnes then confesses that she *did* really have the vision; a bright light duly arrives to prove her true. This double-bluff tries to redeem a plot which starts in the Celtic twilight and ends up with *ET*.

Ashton is a fine TV and radio writer, sure of touch and sound of ear. But this play fails because it is really a fifty-minute TV idea (all image and mood) which at over two hours on stage outstays its welcome. His attention comes to rest somewhere between Ronnie Harwood's wonderful play about faith, *J.J. Farr*, and Bill Forsyth's sharp comedy about greedy Scots, *Local Hero*. If anything, the play supports Simone Weil's insight that a real hell is preferable to an imaginary paradise, but it never reaches that level of seriousness.

The issues are confused, neither acute enough about remote society nor probing enough about the nature of belief. Agnes at her most profound says, "I'm a Protestant, I'm not supposed to have visions." The play's strengths lie in its readiness to let its quick repartee come to rest on lightly-won insights: "Love is like a bucket of water with a hole in it: you can never pour in enough, and you always leave a wet trail." Ashton has a dry touch: "You're still beautiful" says George to Agnes, who replies "And you're still short-sighted."

In face of a plot which beggars belief, the actors have to work hard to round out their characters. Ewen Bremner (George) and John Hannah (Peter) as the brawling brothers, both in love with Agnes, find space that makes their fraternal love-hate plausible; Joanna Roth as Agnes is difficult and edgy, more at home in the next world than this; and Christopher Dunne as *Dooley the Irishman ("there's nothing so thirsty* as a lapsed Catholic") gives the action a whimsical, faraway charm.

Alastair Muir

Joanna Roth and Christopher Dunne

Andrew St George

INTERNATIONAL ARTS GUIDE

TODAY'S EVENTS

■ BRUSSELS

Monnaie 20.00 The Brussels Ring: Sylvain Cambreling conducts Das Rheingold, the opening night of Herbert Wernicke's new production. The cast includes Alan Held as Wotan, Hubert Delamboye as Loge, Livia Budai as Fricka, Franz-Josef Kapellmann as Alberich and Uwe Schönbeck as Mime. Tomorrow at 18.00: Die Walküre with Gary Bachlund as Siegmund, Ellen Shade as Sieglinde, Franz Ferdinand Nentwig as Wotan and Janis Martin as Brünnhilde. Fri: Siegfried with William Cochran in the title role and Victor Braun as the Wanderer. Sun: Götterdämmerung. There are two further cycles over the next three weeks (219 6341)

Palais des Beaux Arts 20.00 The Berlioz Experience: tonight's concert by the London Classical Players under Roger Norrington focuses on music which influenced the young Berlioz, including symphonies by Haydn and Beethoven and extracts from operas by Spontini and Gluck sung by Isabelle Vernet. Tomorrow: Norrington conducts performances of Berlioz's overture Les francs-juges and the Symphonie Fantastique. The programme is repeated in Paris on Thurs and Fri (512 8554). Thurs: Ronald Zollman conducts the Belgian National Orchestra in Britten's War Requiem, with soloists Alison Hargan, Maldwyn Davies and Philippe Huttenlocher (507 8200)

Théâtre National 20.15 Strindberg's A Dream Play directed by Isabelle Pousseur, runs till Sat. Kleist's Amphitryon, directed by Marc Liebens, opens on Thurs in the Petite Salle, and runs till Oct 26, except Mon (217 0303)

■ FRANKFURT

Alte Oper 20.00 Yoel Levi conducts the Atlanta Symphony Orchestra in Berlioz's Roman Carnival overture, a suite from Prokofiev's Romeo and Juliet and Beethoven's Third Piano Concerto, with Bruno Leonardo Gelber. Tomorrow: Alfredo Kraus recital. Thurs: Viktor Tretiakov is conductor and violin soloist with the Moscow Chamber Orchestra. Fri: Neeme Järvi conducts the Gothenburg Symphony Orchestra (1340 400)

Opernhaus The opera season opens on Fri with a new production of La traviata conducted by Silvio Varviso, with Margaret Marshall as Violetta (236061)

■ LONDON

Sadler's Wells 19.30 Phoenix Dance Company: the all-black troupe express their remarkable physicality in a new programme including Philip Taylor's Sacred Space, Neville Campbell's Heavy Metal and a work by Tom Jobe. Daily till Sat (071-278 8916)

Covent Garden 17.00 Bernard Haitink conducts Gotz Friedrich's production of Götterdämmerung, with Gwyneth Jones as Brünnhilde, Rene Kollo as Siegfried, John Tomlinson as Hagen and Ekkehard Wlaschiha as Alberich. Tomorrow and Sat: Rigoletto. Thurs: Das Rheingold. Fri: Die Walküre (071-240 1066)

Coliseum 19.30 Jonathan Miller's production of The Mikado, also tomorrow and Fri. Thurs and Sat: La boheme (071-836 3161)

Royal Festival Hall 19.30 Esa-Pekka Salonen conducts the Philharmonia Orchestra in Debussy's Rondes de Printemps, Stravinsky's Petrushka and Sibelius' Violin Concerto, with Cho-Liang Lin. Tomorrow: Arturo Tamayo conducts the BBC Symphony Orchestra in Haydn, Xenakis and Falla (071-928 8800)

Queen Elizabeth Hall 19.45 Elgar Howarth conducts the London Sinfonietta in music by Harrison Birtwistle, Hans-Jürgen von Bose and Detlev Müller-Siemens. Fri: piano recital by Peter Katin (071-928 8800)

Barbican 19.45 Gustav Kuhn conducts the English Chamber Orchestra in Haydn's The Creation, with Pamela Coburn and Josef Protschka. Tomorrow: Mitsuko Uchida plays two Mozart piano concertos. Thurs, Fri and Sun: Takemitsu festival. Sat: Victor Borge (071-638 8891)

■ NEW YORK

New York State Theater 20.00 New York stage premiere of Bernd Alois Zimmermann's Die Soldaten, staged by Rhoda Levine, designed by John Conklin and conducted by Christopher Keene. The cast is led by Lisa Saffer as Marie. Repeated Sat matinee. Thurs: The Most Happy Fella. Fri: Bizet's Pearl Fishers. Sat evening: Madama Butterfly (870 5570)

Avery Fisher Hall 19.30 Yuri Temirkanov conducts the New York Philharmonic Orchestra in Prokofiev's Lieutenant Kijé Suite, Rimsky-Korsakov's Scheherazade and Rakhmaninov's Second Piano Concerto, with Elizo Virzaladze. Thurs, Fri, Sat and next Tues: Temirkanov conducts Ravel and Stravinsky. Sun and next Wed: Christoph Eschenbach conducts the Bamberg Symphony Orchestra (875 5030)

Alice Tully Hall 20.00 Song recital by Lucia Popp accompanied by Armen Guzelimian, with music by Dvorak, Mahler, Wolf and Richard Strauss. Tomorrow and Sun in Avery Fisher Hall: Itzhak Perlman and Daniel Barenboim play Mozart violin sonatas (721-6500)

Metropolitan Opera 20.00 James Levine conducts Idomeneo with a cast led by Anthony Rolfe-Johnson, Cheryl Studer and Anne-Sofie von Otter. Tomorrow: Un ballo in maschera (362 6000)

■ PARIS

MUSIC

Palais Garnier 19.30 Roy Goodman conducts the Hanover Band in Mendelssohn's complete music for A Midsummer Night's Dream. Thurs, Fri, Sat, Sun: Pas de deux extracts from the repertoire of the Opéra Ballet (4017 3535)

Opéra Bastille 19.30 Myung-Whun Chung conducts Jean-Pierre Miquel's production of Idomeneo, with Thomas Moser in the title role, Inga Nielsen as Elettra and Nuccia Focile as Ilia. Also Thurs and Sat (4001 1616)

Salle Pleyel 20.30 Michel Corboz conducts Mozart's arrangement of Handel's Messiah, with soloists including Catherine Dubosc and Guy de Mey (4561 0630). Thurs and Fri: Emanuel Krivine conducts the Orchestre de Paris. Sat: Jacques Mercier conducts the Orchestre National d'Ile de France (4563 0796)

Eglise Saint-Nicolas des Champs 20.30 Festival d'Art Sacré: Beatrice Berstel conducts five Bach cantatas with Le Concert Royal and the Ensemble Vocal BWV (254 rue St Martin, metro Arts et Metiers, 4233 4300)

Théâtre de la Ville 20.30 Chateaux en Espagne, new dance work by Michele Anne de Mey, repeated tomorrow, with an alternative programme on Fri and Sat (4274 2277)

THEATRE

Théâtre de Gennevilliers Two Festival d'Automne premieres take place tonight: in Salle I, Marc François' production of Shakespeare's As You Like It, in a translation by Jules Supervielle; in Salle II, Stephane Braunschweig's Theatre Machine production of Sophocles' Ajax, in the translation by Leconte de Lisle. Daily except Mon till Nov 3 (41, ave des Gresillons, Gennevilliers, metro Gabriel-Peri, 4793 2630)

Odeon Théâtre de l'Europe Le Temps et La Chambre: Botho Strauss' play is directed Patrice Chéreau. Daily except Mon till Dec 15 (4325 7032)

Comédie Française This week's repertory includes Beaumarchais' Le barbier de Seville tonight, Thurs and Sat, and Aimé Césaire's new play about colonial Haiti, La Tragédie du Roi Christophe, on Fri (4015 0015)

Atelier Shakespeare's Richard II is directed by Yves Gasc with a cast led by Laurent Terzieff. Daily except Mon till Oct 27 (1 place Charles-Dullin, 18e. 4606 4924)

Bouffes Parisiens Ornifle, Anouilh's bitter-sweet comedy about flaunting conventions, is directed by Patrice Leconte, with Jean-Claude Dreyfus in the title role. Daily except Mon (4 rue Montsigny, 2e. 4296 6024)

■ STOCKHOLM

Konserthuset 19.30 Music by Schnittke, Lutoslawski, Ligeti and Ingvar Lidholm: the Konserthuset this week hosts a series of chamber and orchestral concerts focusing on four living composers. Tonight, the Talich Quartet plays string quartets by Eliasson, Lidholm and Schnittke. Tomorrow's programme includes string trios by Blomdahl and Schnittke, and works for cello and piano by Lutoslawski. On Thurs, Leif Segerstam conducts the Stockholm Philharmonic Orchestra in a programme including Lutoslawski's Chain II and Lars-Erik Larsson's Three Orchestral Pieces op 49. On Sat at 12.30, Lidholm, Schnittke and Lutoslawski will discuss their work, followed at 15.00 by a concert including Ligeti's Atmospheres, Lidholm's Poesis and Schnittke's Peer Gynt Epilogue (248240) **Royal Opera** 19.30 Kenneth MacMillan's production of Romeo and Juliet, also Thurs. Tomorrow and Fri: Johann Gottlieb Naumann's Swedish opera Gustav Vasa (1786), with a cast led by Nicolai Gedda. Sat: Carmen (244130)

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Eurosport
0800-0830 International Business report

CNN
0730-0800 Moneyline
1230-1300 Business Morning
1330-1400 Business Day
2000-2030 World Business Today – a joint FT/CNN production with a review of business stories
2300-2330 World Business Today
0100-0130 Moneyline

Superchannel
2130-2200 (Tues) East Europe Report – weekly financial report from FTTV.
2130-2200 (Wed) FT Business Weekly - the latest round-up of business news with James Bellini and Debbie Middleton.
2130-2200 (Thurs) Talking Heads

Sky News
1200 International Business Report
1130, 1730, 2130, 0430, 0530 (Thurs) FT Business Weekly

SATURDAY

CNN
0730-0800 Moneyline
0900-0930 World Business This Week - a joint FT/CNN production
1540-1610 Moneyweek
1900-1930 World Business This Week
2110-2140 Your Money

SUNDAY

Superchannel
1800-1830 FT Business Weekly

Sky News
1330, 1630, 2030, 0030, 0230 FT Business Weekly

CNN
0710-0740 Moneyweek
1340-1400 Inside business
1540-1610 Your Money
1800-1830 World Business This Week
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Competition stirs the EC

THE ROW over the European Commission's decision last week to block the proposed bid by *Aérospatiale of France* and Alenia of Italy for the Canadian aircraft manufacturer de Havilland is a pleasantly ironic case of role reversal within the Community.

On the one hand we have the spectacle of leading French politicians attacking the Commission for overweening arrogance in the exercise of its increasingly substantial powers. On the other, the Commission's president Mr Jacques Delors has been attacking his compatriots for their schizophrenic attitude to Community institutions. Not for the first time it is clear that British reservations about the institutional arrangements of the EC are not unique. But the political fallout from the decision threatens to take on a nasty complexion. Was this the right deal to choose for the first attempt to block a takeover under the EC's year-old merger regulations?

At first sight the EC competition commissioner Sir Leon Brittan appears to have a powerful case. If the proposed takeover of de Havilland had been consummated, the enlarged grouping would have had 67 per cent of the European market *for 40-70-seat commuter aircraft* and 50 per cent of the world market. The logic behind the deal was all to do with market share. And the development costs even at this end of the market constitute a big deterrent to new entrants, as do the costs of establishing a marketing network.

Monopolistic threat

The monopolistic threat thus seems clear enough. There is no longer any obvious rescuer in the wings for de Havilland and every likelihood that there will be further casualties in a market where no one is making money. Among those likely to come under pressure to throw in the towel would be British Aerospace and Fokker of Holland, for which the consequences would almost certainly be more *serious than for* Aérospatiale and Alenia. Delivering de Havilland into the hands of two large state-owned groups would have been hard *for any competition watchdog* to justify when private sector competitors in Europe stood to improve their market position after the demise of the *Canadian company. Or, indeed,* when the small regional airlines are the most obvious victims of the slump in air travel.

Yet in practice market share has proved a poor guide to establishing the real state of competition. And there is no reason to believe that this is not the case with commuter aircraft. The French and Italians argue that Sir Leon has defined the market too narrowly. Equally important, developing countries tend to regard regional commuter aircraft as the logical point of entry to acquire the know-how to attack the wider aerospace market. The potential competition is therefore greater than the bare figures indicate.

Industrial policy

But that scarcely strengthens the case of the Italian and French governments. Their concern is less with potential weaknesses in Sir Leon Brittan's argument about competition than with industrial policy. They want a European champion at this end of the aircraft market. But for what? The *défi américain* no longer exists: de Havilland's parent, *Boeing, wants no more truck* with commuter aircraft. Does the Community really want a European champion to smash the fledgling aircraft manufacturers of the Third World at considerable cost to the European taxpayer?

The problem is that the liberal and *dirigiste* tendencies within the Community are irreconcilably at odds here. And with slower growth in Europe the advocates of industrial policy are in the ascendant. Sir Leon scored a notable coup in persuading his fellow commissioners to back a bold judgement against the odds. But as long as competition policy remains wholly under the control of the Commission the battle is never won. It would help to devolve part of the Commission's monitoring role to an arms' length watchdog. But in the final analysis it is impossible to drain competition policy of its political dimension. Nor is the present French and Italian disenchant*ment with Brussels likely to* lead in that direction.

Paying for the party

THE NEWS that the Conservative party is the latest victim of the UK recession is unlikely to elicit widespread sympathy *among hard-pressed businesses* or those sweating to repay hefty mortgages. Yet figures published yesterday by the Labour party suggest that donations to the Conservatives from large companies have fallen in real terms as management seeks economies in a hostile climate. The Conservatives expect the cost of the coming election campaign to top the £9m spent in 1987, and will rattle the collecting tins around the boardrooms again.

Labour's finances are in no better state – and the postponement of the general election until next year will add further strain for several more months. However, the unions can be relied upon to empty their political funds into Labour's election coffers once battle is joined – they helped Labour find a war chest of £4.7m for the 1987 election.

This reliance on business and the unions to provide funds to underwrite the two main political parties has always been uncomfortable. It is easy to portray Labour as a pawn of its union paymasters, particularly because the unions get the preponderance of votes at the party conference in return for their money. The sight of Mr Ron Todd of the TGWU union holding up a block vote carrying twice the weight of all the votes of individual members put together does nothing for Labour's democratic credentials.

The countercharge – that the Conservatives are in the pockets of big business – lacks the proof of direct influence, since there are no block votes at the Tory conference. But Lord King's justification for withholding British Airways' normal donation this year "in view of a series of decisions by the government and their adverse effect on our business" suggests that at least one donor expected something in return.

Political donations

The potential for abuse, however, is mitigated by the requirement that companies and unions disclose political donations. The same cannot be said for donations from individuals or partnerships. And the Conservatives have allegedly received donations from overseas, such as the £2m *reputedly given by* Greek shipping billionaire Mr John Latsis, or the sizeable gifts from two Hong Kong businessmen.

Smallest gifts

These overseas donations would be illegal in the US, where Greeks bearing gifts are as unacceptable as Moscow gold. The US also sets ceilings on donations to political campaigns and insists that all but the smallest gifts be declared. These measures have not been entirely successful because of the potential for evasion (what, for example, is a political donation?). However, the potential for abuse where political par*ties are funded by donations* from individuals, companies and unions is clearly less when disclosure is the rule, and it should be adopted in the UK.

The alternative approach to cut political parties free of vested interests is state funding. This is widely adopted in other European countries, and was recommended for the UK in 1976 by the Houghton Report. Indeed, it already operates in the UK to a limited extent: parties represented in the European Parliament receive financial support from the EC; the main opposition parties in the UK parliament share the "Short money" to cover administrative costs; and there is free broadcasting time, a free postal delivery to voters in general elections and some other benefits in kind.

While funding for parties can make them more independent of vested interests, it cuts against the UK tradition that parties are voluntary bodies which should find their own funds. And the experience of countries which have introduced state funding is that it increases spending rather than replacing existing sources. Nor does there appear to be public support: a recent survey suggested that the majority would oppose such subsidies.

With the Conservatives against state funding of parties, there is unlikely to be the all-party support needed to introduce it in the near future. Disclosure for all donations over a suitable minimum is therefore pressing.

The economic collapse of the Soviet Union is set to dominate the annual meeting of the IMF and World Bank. Peter Norman reports

A poor guest at the party

For the second time in three months the problems of the Soviet Union will dominate one of the great annual set piece meetings on the world economy.

Between July's Group of Seven summit in London and the annual meetings of the International Monetary Fund and World Bank, which get under way this week in Bangkok, the crisis enveloping the former communist superpower has intensified and threatens to run out of control.

When President Mikhail Gorbachev visited London and met the leaders of the US, Japan, Germany, France, Britain, Italy, Canada and the European Community, it was still possible to talk of a Soviet *Union* and to discuss, with some kind of plan in mind, the strategies for integrating this vast region into the world economy.

Since then, there has been August's failed coup. Although a victory for democracy, the economic consequences have been a chaotic breakdown of economic relations between the union and the republics, a deepening paralysis among policy-makers at all levels, a growing threat of hyperinflation, official talk of a drastic fall in Soviet gold reserves and fears of a foreign debt crisis.

Last weekend's signing of a special association agreement between the Soviet Union and the IMF may conceivably be the start of the necessary reform process that will turn what is left of the union and the republics into market-oriented economies.

But the west – acting through the IMF and World Bank – is taking a huge gamble on the capacity of the Soviet Union to reform itself with western know-how under the umbrella of the association agreement. With many observers drawing parallels between conditions in the Soviet Union and the economic collapse of Germany's ill-fated Weimar republic between the wars, only the brave expect that the international financial institutions or their western sponsors will emerge from the experience without having to supply the Soviet Union with large-scale financial support. The huge problems posed by the economic crisis in the Soviet Union also threaten to change the character of the IMF and World Bank – bringing the two institutions more closely under the influence of the G7 countries and the US, their biggest shareholder, in particular.

The talks in Bangkok on the Soviet Union will pull the IMF and World Bank further into the orbit of the G7 and their biggest member state, the US

"It is almost impossible to overestimate the difficulties that they [the Soviets] face in making change," says Mr Norman Lamont, Britain's chancellor of the exchequer. Officials in Washington say a top level US delegation, headed by Mr Nicholas Brady, the Treasury Secretary, and Mr Alan Greenspan, the chairman of the Federal Reserve Board, recently returned "horrified" at what they saw of economic conditions in the former Soviet Union.

The US economic policy-makers came back talking of inflation running at 3 per cent, 5 per cent or even 7 per cent per week. Mr Greenspan was reportedly asked if the US could supply special paper to make rouble bank notes because Soviet paper mills were unable to satisfy the printing presses of Gosbank, the Soviet central bank. An acquaintance of Mr David Mulford, the US Treasury under-secretary for international affairs, described how he saw him at a reception pacing back and forth "like a tiger in a cage", unable to disguise his deep concern over what he had seen.

Symptomatic of the disarray is the continuing uncertainty over who will represent the Soviet Union or the republics in talks with the G7 nations tentatively scheduled for Friday and in the IMF's policy-making Interim Committee on Sunday, where the Soviet delegation is expected to speak.

That Russian will be spoken in the Interim Committee meeting shows how much the Soviet Union and its *republics now want to integrate into* the world economy. But many delegates will be asking whether the Soviet Union's problems should preoccupy the annual meetings of two organisations which exist for the benefit of the entire world economy and which until recently were held in contempt by Moscow.

The Soviet people face great difficulties, such as food shortages, this winter. But they are unlikely to match the hardships that have been faced in much of Africa for many years. In purely economic terms, the Soviet crisis almost certainly poses less of a threat to the world economy than a possible reversal of the present hesitant US recovery.

The region's share of world trade is small, the more so since the political liberation of eastern Europe and the collapse of the Comecon trading block have drastically cut trade with Moscow's former satellite states. It is impossible to make an accurate estimate of the size of the Soviet economy in the absence of reliable statistics, but it could turn out to be about the same size as that of the UK.

Nor according to Mr Horst Schulmann, managing director of the Washington-based Institute of International Finance (IIF), should the west lose much sleep over Soviet debt. His institute, which is owned by the world's big commercial banks, believes the Soviet Union has the "economic wherewithal" to service this year all debt contracted or guaranteed by Vneshekonombank, its foreign trade bank.

But whether or not the Soviet Union is economically capable of servicing its debt is of secondary importance. What mainly concerns the US and its G7 partners are the geo-political implications of the region's economic collapse.

It is potentially the most dangerous form of superpower: in decline, possibly disintegrating, with nuclear weapons capable of destroying the world, a string of environmentally suspect nuclear power plants and large numbers of people – variously estimated at between 10m and 25m – who are *potential emigrants. August's failed* coup highlighted the political instability of the region. The threat of social unrest, engendered by economic hardship, remains.

The London summit demonstrated that the Soviet economic crisis had become a top-level problem for western leaders and their foreign ministries as well as their treasuries. The subsequent coup attempt has added to the sense of urgency surrounding the discussions that will be held in Bangkok.

Mr James Baker, the US Secretary of State, and Mr Brent Scowcroft, the head of the National Security Council, will be keeping a watchful eye over Mr Brady and his colleagues, just as Mr John Major, the UK prime minister *and current chairman of the G7* leaders' group, will be kept closely informed of the discussions by Mr Lamont.

For the moment, the general consensus among G7 finance ministries is that the Soviet Union is in no condition to receive a massive injection of financial assistance.

There is a willingness to provide food aid, once Soviet requirements are known. More important is the longer term objective of introducing the market economy, through technical assistance programmes under the auspices of the IMF. The US Treasury has also said that the G7 would be prepared to discuss "in a constructive fashion" possible Soviet liquidity problems in connection with the servicing of its *estimated $60bn of foreign debt.*

But Mr Mulford made clear last week that debt relief in the sense of reducing the Soviet Union's foreign debt is "not on anybody's agenda". For the Soviet Union to interrupt payments of its debt, declare a moratorium or request a rescheduling or restructuring would be very damaging, he insisted. Such action would destroy what remained of its creditstanding with the international banking community and cut off official government credits.

The US Treasury team has been taking a stern line towards the Soviet Union in its economic crisis, in part because it fears that to do otherwise would endanger congressional support for a 60 per cent increase in IMF quotas that is due to be agreed by the end of this year. But there are doubts whether the State Department and the National Security Council can be expected always to follow suit.

Their priority is to prevent the total disintegration of the Soviet Union. Washington has come to believe that continuing links between the Russian *Federation and the* Ukraine are central to the maintainance of a single economic space and control over Soviet nuclear weapons. If this relationship were threatened, would Mr Baker or Mr Scowcroft favour a more activist policy involving greater financial support?

Last week, Mr Mulford said that creating "some sort of mechanism" to allow the various authorities in the former Soviet Union to maintain their economic links would be a focus of the discussions in Bangkok. Such talk has kept alive speculation of back-up facilities or bridging loans for the *Soviet Union or moves to get its* application for full membership of the IMF and World Bank onto a "fast track" for approval.

The special associate status agreed at the weekend does not allow the Soviet Union to draw funds from either of the two institutions. Yet both the IMF and World Bank have what the US currently lacks – financial resources to underpin the market-oriented economic aims of a new world order based on pluralism and democracy.

The IMF has again become a net provider of finance to countries with economic problems after years in which the total credit extended by the Fund had declined. If the current quota increase is ratified as planned, the IMF's capital resources will increase *by 50 per cent to* 135bn special drawing rights, or $185bn. It has been estimated that between $35bn and $45bn of IMF resources could be used for loans to the Soviet Union.

The World Bank, *following a recent* capital increase, has at least $35bn "headroom" that could be used for lending to the Soviet Union. There are suggestions in Washington that Mr Lewis Preston, *the bank's new president,* is prepared to pursue a more ambitious lending policy than previously.

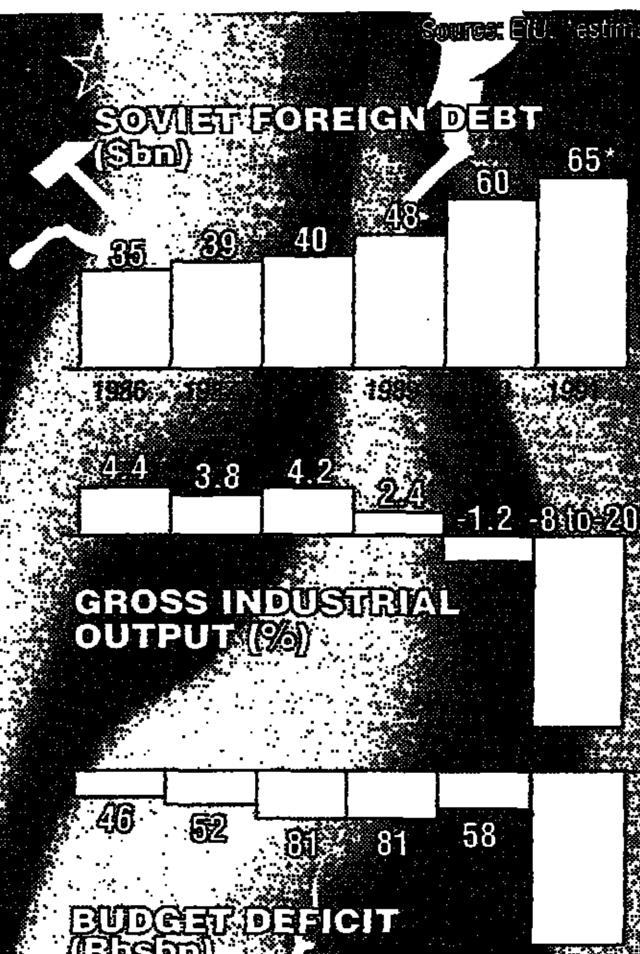
At the weekend, Mr Michel Camdessus, the IMF managing director, declared that helping the Soviet Union would be a "thrilling challenge" for his organisation. The IIF's Mr Schulmann, among others, has predicted that the Soviet Union could be a member of the IMF by the middle of next year.

But this is a less than welcome prospect to many of the Fund's 155 members, many of which have large claims on the IMF's and World Bank's resources.

The World Bank's latest annual report said that more than 1bn people in developing countries live in poverty. Plans put forward by Mr Major when chancellor to alleviate the debt problems of the poorest countries in Africa have been on the international monetary agenda for a year. According to Mr Willi Wapenhans, a senior World Bank official, the countries of central and eastern Europe need $20bn a year of foreign capital until the end of the decade if their economies *are to grow at all.*

These and other nations will be pressing for more financial support, as the big industrial countries puzzle their next move in the face of the Soviet Union's economic crisis.

But it seems all too likely that the talks in Bangkok on the Soviet Union will pull the IMF and World Bank further into the orbit of the G7 and their biggest member state, the US, raising fears, particularly among their Third World members, that the two institutions will end up little more than extended arms of US foreign policy.




Michel Camdessus


Lewis Preston

Defense de fumer

■ The rule that nobody is more anti-smoking than a newly recanted smoker applies to countries too. As witness France whose government is showing typical French rigour in its efforts to exorcise the country's old reputation as one of Europe's smokiest.

It was only at the end of last year that parliament was persuaded to bless a ban on tobacco advertising from 1993. But already Health Minister Bruno Durieux is hatching a plan to ban smoking in cinemas, exhibitions, sports halls, food stores and universities, and to set strict curbs in restaurants, aircraft and long-distance trains.

The job of deciding whether to implement the plan – whereby illegal smokers could be fined £20-£250 – belongs to Prime Minister Edith Cresson.

Tobacco companies are predictably fuming, and perhaps because the no-advertising law drew scarcely a wisp of protest from the public, are out to convince her that the direct ban would be politically unhealthy. Philip Morris, for instance, has produced a survey suggesting that 77 per cent of French citizens think it unnecessary for the state to rule whether or not people can smoke in restaurants and such places.

A notable absentee from the company lobbying, however, is Seita which makes Gauloises and Gitanes. The reason for its silence, of course, is that it is fully state-owned.

Hazy

■ While the French government is trying to clear the air, the Paris Bourse would seem to be putting up a bit of a smokescreen – and in the pink pages at that.

Its advertisement in the FT's international news section yesterday posed three questions, of which the middle one read: "Which European market lists more EC companies than any other?" The answer, the ad implied, was Paris ahead of London, Amsterdam and Frankfurt.

Not so, snorts the London *Stock Exchange. Its most* recent count shows that, when all European Community countries including both the UK and France are taken together, London lists 1,997 companies from the EC whereas Paris lists only 521.

The Bourse responds that what its question meant was "which European exchange lists most companies from the EC *excluding those from the particular exchange's home country*?" On that basis, with French companies omitted, Paris lists 74; London, net of UK companies, lists 60.

Anyone know the French for "Lies, damned lies and statistics"?

OBSERVER


"The NHS is safe in our lips."

Floor price

■ Sign of the times: a "to let" board is going up outside a City of London office building offering space to let for the princely sum of £1 a square foot a year. The estate agent, Conrad Ritblat, describes it reluctantly as an unbeatable offer. "I am not looking for records. I'm looking for business," the agent groaned.

The building – 10 Bonhill Street, London EC2 – is hardly London's smartest address, although it is within a short walking distance of Liverpool Street. The 11,000 square feet of converted warehouse is being rented out for next to nothing in the hope that the occupier will cover rates and running costs for the next three years until the economic climate improves and it becomes profitable to rebuild.

Even this is not a record, however. In the London Docklands, which has an even larger surplus of space than the City, one developer is offering to charge no rent at all for an office block for two years. *Moreover the tenant has the* right to move out when the two years are up, although it's hoped the charm of the area will lead to a renewal of the lease... at a profitable rent.

Publicity drive

■ "Honest" Ed Mirvish, Toronto's greatest (only?) showman, obviously has a sense of humour. The 77-year-old theatre owner and restaurateur cheerfully lost £500,000 during the three years when Jonathan Miller ran the Old Vic, the London theatre that Mirvish bought in 1982.

Now he is putting on a little comedy drama of his own. On Sunday morning he will be shepherding a flock of sheep over London Bridge, one of the few privileges left to a Freeman of the City of London. Of course it is a stunt to draw attention to the new $40m theatre that Mirvish is building in Toronto as a home for the Canadian production of *Miss Saigon.*

Mirvish will do anything for his art. To attract publicity for the Old Vic in the early 1980s he had himself photographed enjoying one of the other privileges of a Freeman – being hanged (in his case symbolically) by a silken cord rather than a rope.

Fulsome

■ One would have thought that Peter Walker, the retiring Tory MP for Worcester, was both rich and independent enough not to have grovel before the party leadership. Here he is, however, giving his assessment of John Major on the eve of the Tory *conference in Blackpool.*

"I believe he possesses the thoughtfulness of Harold Macmillan, with a similar desire to unite our country. He possesses the dignity and integrity of Alec Douglas-Home. He shares the visions of Ted Heath on Europe and his distaste of unemployment. I think that in a different way *he will show the same* enthusiasm and determination displayed by Margaret Thatcher. If we finish the century with such a prime minister, we will be blessed."

The words are from Walker's autobiography, Staying Power, published yesterday.

Two nations

■ A more intentional joke circulating in Blackpool concerns Tory MP David Fishburn when canvassing in his Kensington *constituency.*

His knock on one of the grander doors was answered by a butler who, on being asked how the household would vote, intoned: "Madam wants it to be known that she is somewhat disillusioned with the Conservatives."

"And you?", the MP said.

"Ah well, guv, I'm with you all the way. Couldn't afford to be otherwise," came the reply.

US budget goes back on the block

Pressure to cut defence spending and stimulate growth appears irresistible, writes Lionel Barber

Mr Richard Darman, the director of the US Office of Management and Budget, has finally waved the white flag.

In a weekend television interview he conceded what many other administration officials have been loath to admit: that the much-heralded, five-year $500bn budget deficit reduction agreement with Congress is unravelling to the point where it will have to be renegotiated before the presidential election in November 1992.

Mr Darman laid down conditions to his offer – notably that a new budget deal must promote economic growth and continue to reduce the federal deficit. But the twin forces undermining the pact – pressure to cut defence spending combined with calls to stimulate the flagging US economy through a mix of tax and spending proposals – appear to be irresistible.

By far the most important driving force is the clamour among both Republicans and Democrats to cut America's $300bn military budget – a direct result of the August revolution in Moscow. The failure of the coup and the resulting political and economic chaos challenged many of the premises that sustained US attitudes towards the Soviet threat and America's necessary military response for most of the post-second world war era.

Suddenly, Democrats and Republicans have begun to scramble for the "peace dividend", the huge imagined savings from the defence budget which could be applied to America's pressing domestic needs in health, education and other social programmes. Ironically, Mr Bush may have contributed to these pressures.

The president's sweeping nuclear arms control proposals unveiled two weeks ago drew applause around the world; but from the point of view of his own Republican supporters on Capitol Hill, the timing could not have been worse. The offer came just as House and Senate negotiators were about to conclude their discussions on the fiscal 1992 defence budget.

Mr Bush's plans undercut conservatives who were holding the line to defend the president's favoured programmes: the MX multi-warhead missile, the B-2 Stealth bomber, and the "Star Wars" anti-missile defence system. Though confined to nuclear weapons, they cast fresh doubt on the Pentagon's five-year plan to reduce military spending in real terms by 3 per cent a year, and to cut the US armed forces by 25 per cent. Worse, President Bush said the cuts would not result in immediate savings.

The sweeping, unilateral nature of Mr Bush's offer to Moscow seemed to confirm what many liberal Democrats had been arguing all summer: since war with the Soviet Union was no longer a "realistic threat", it was safe to cut the defence budget even deeper.

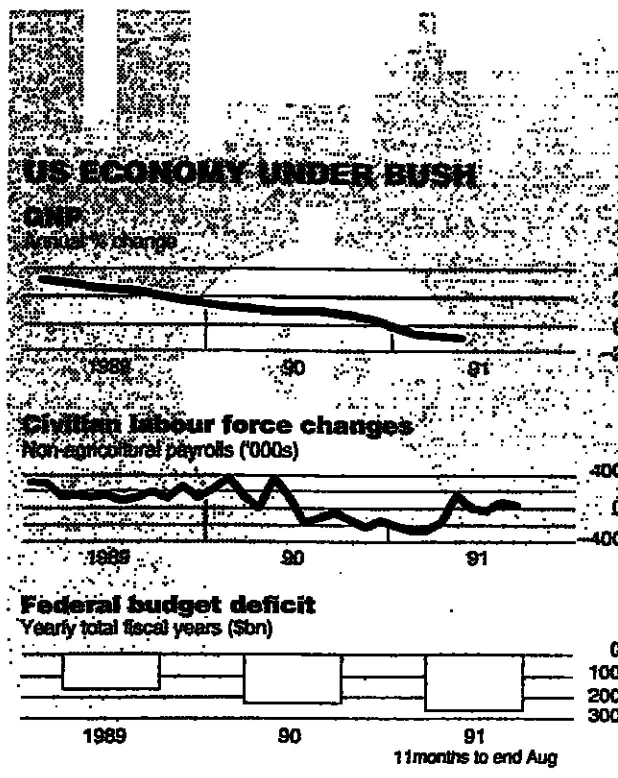
Mr Darman himself alluded to the pressure for further defence cuts during during his TV interview on Sunday: "You can't have the radical changes we've seen in the Soviet Union and not expect there's going to be some adjustment in the defence budget. The president has already made a major move, and it will have some savings. With further adjustments, there may be more savings."

Yet these words, echoed throughout the administration and on Capitol Hill, conceal an even larger truth: the five-year budget agreement has proved too inflexible to deal with changed circumstances, especially when confronted with a government divided between a Democratic Congress and a Republican administration, heading into an election year.

This is painful for Mr Darman, the chief architect of the budget pact; it is even more painful for Mr Bush, who once complained that he had sweated pints of blood in October 1990 by agreeing to raise taxes in exchange for the Democrats agreeing to strict spending curbs, all the time hoping the runaway federal deficit might finally be curbed.

The budget pact sets dollar ceilings for three broad categories of spending: defence, international (mostly foreign aid) and domestic. Mandatory spending, such as social security benefits, federal employees' pensions, and Medicare health benefits for poor people are exempt. At the same time, the agreement stipulates that any tax cuts require corresponding spending cuts; also, that funds cannot be shifted between the defence budget and the domestic budget.

From the Republican point of view, the budget agreement was unpalatable since it deprived the party of its "no new taxes" pledge which helped it to win two presidential elections. But its chief merit was that it put the Democrats and their spending proposals into a straitjacket: if the Democrats wanted to increase spending, then compensatory cuts were required elsewhere.



The problem is that the budget pact has failed miserably to control the federal deficit which, by the administration's own admission, is expected to rise to more than $345bn next fiscal year, starting this month. Just 20 months ago, Mr Darman predicted that the deficit in fiscal 1992 would be $25.1bn.

Mr Darman's response is that the economic growth upon which he based his predictions has been wiped out, the victim of the crisis in the savings and loan industry and the unforseen economic downturn caused by the Gulf war – or "Saddam's recession", as it is known in Washington.

But in a widely circulated review of Mr Darman's performance in last week's National Review magazine, Mr Warren Brookes, a columnist, accuses the budget director of ignoring "three fundamental lessons in Washington's fiscal history: first, that every tax increase will slow down the economy and revenue growth, making the deficit worse; second, that historically, every dollar of higher federal taxes has been accompanied by $1.22 in higher spending; and third, that every budget summit, without exception, has produced *higher* deficits, not lower ones".

Even allowing for a little hyperbole, it seems safe to assert that some of Mr Brookes' sentiments are shared by the administration, particularly those staffers charged with planning for President Bush's re-election next year.

Increasingly, pressure is building up for a new "economic growth" package which would kick-start the economy and boost consumer confidence, and break the cycle of slow growth which has given Mr Bush the worst economic record of any president since the second world war.

The difficulty is that any new package must be squared either by a change in the law approved both by the president and Congress, or with the enforcement provisions of the budget agreement. Here, the most obvious loophole is the clause which provides for the five-year agreement to be breached for emergencies.

Republicans in Congress already have their answer. Senator Phil Gramm, the conservative Texan who is likely to run for president in 1996, has put forward an Emergency Economic Growth Act which would include a cut in the top rate of capital gains tax to 19.6 per cent. It also includes provisions to transfer some of the defence savings into deficit reduction. Indeed, the administration view is that if the principle of "pay as you go", the cornerstone of the 1990 agreement, is upheld, then financial markets should be reassured about US discipline.

Although Mr Bush has spoken up for the Gramm bill, some of his advisers remain uncertain. Mr Nicholas Brady, US Treasury Secretary, frets about a fight over capital gains unravelling the tax code; Mr Darman is reportedly worried about the Democrats reviving last year's demand for a trade-off of higher individual income tax rates. Meanwhile, there are reports of shouting matches at a recent Cabinet-level meeting at which Mr Jack Kemp, Housing Secretary, pressed hard for a "growth package".

Sensing these divisions and the American public's desire for a debate on domestic issues, the Democrats have come out of their shell. For the first time in years, the party has been able to talk about cuts in defence spending without being cast as soft on communism. Equally, voters appear to be responding to the kind of message which Senator George Mitchell, Senate majority leader, pumps out daily: President Bush can find money from the budget to deal with emergencies overseas but he remains unwilling to use it at home to help ordinary middle-class Americans. None of this should suggest that Mr Bush has lost his current status as favourite in next year's election; he still towers over the declared Democratic candidates. Yet the debate next year will at least be conducted on a more level playing field. Instead of relying on Gulf war parades, Mr Bush will have to talk about basic budget issues such as social programmes, middle-class tax relief and cuts in the deficit.

Joe Rogaly

Tories consumed

The Tories are boxed in, but not to a date. Their prison is in the mind. They are stuck with a perception of the individual as a consumer. This limiting notion colours all else. It draws a close boundary around the horizons of the Conservative intellect, and sets Mr John Major on a course from which he can hardly deviate between now and the election.

Compared with such a handicap the question of whether the contest is to be held in March, April, May, June or July of next year is secondary. The prime minister was reported in The Mail on Sunday to have remarked that the last possible date for an election was July 9, adding: "If I think it is appropriate to go to July 9, I will." Fine, but he is travelling towards the "appropriate" date encased in a steel boxcar running on iron wheels, with nobody around to change the signals.

This is not to say that socialism, a more ancient form of mental confinement, has some life left in it after all. Forget about socialism. It may come up in the children's history homework but you can look it up in the encyclopaedia when it does. What contemporary politicians need to do is think through the implications of living in a post-socialist society. Last week in Brighton we saw the Labour party fumbling towards some attempt at an answer. It may not have known precisely what it was up to, but it struck a chord. This morning the Tory conference opened in Blackpool with not a hint of any recognition of the question.

Let me spell it out. We are all consumers – but we are also all citizens. Most of us are producers. For a variety of reasons, some genuine, some specious, some downright dishonest, Labour has managed to produce an election platform that touches all three elements in the individual psyche. The old producers' party remains beholden to the trade unions, which would certainly be rendering their invoices after a Labour victory, but that prospect has been successfully, if no doubt temporarily, camouflaged. It is as producers that we are offered Labour's education and training slogan. A market-stall full of charters has been set up to proffer consumers' rights. Constitutional reform has been dangled before the citizen in us; at its heart lies a tease on proportional representation for the House of Commons whose promise would be consummated only if Labour had no other option.

I could find you a flaw in every one of these proposals. We all know that on close examination a number of them do not stand up at all. For election purposes, however, it is the overall impression that counts. As the weekend polls indicate, that impression is positive for Labour. The Conservatives therefore have a problem. They seem incapable of a flexible response. They are endemically suspicious of producers and unable to grasp the concept of citizenship.

This can be explained. Tories look to the disciplines and opportunities of the market, expressed through consumers' purchases, to provide a climate in which producers can operate. That apart, Marxism was a producers' ideology, so Conservatives resist constructive debates about trade unions. The unions behaved like mindless thugs in the late 1970s. They were smashed during the 1980s. A little more smashing is required. End of thinking on that one. Again, Thatcherites have accepted rising unemployment with more equanimity than did their one-nation predecessors. It is an unavoidable concomitant of reducing inflation. Mr Major is good at expressing sympathy for the jobless, and I am sure he does so from a genuine sense of concern. That's it.

As to citizens, the Conservatives are not so much baffled as brain dead

As to citizens, the Conservatives are not so much baffled as brain dead. Mr Major's Citizen's Charter may prove to be an excellent mechanism for improving standards of public service. It is, however, a charter for individual taxpayers in their capacity as consumers of public services, not for citizens claiming political or civic rights.

This is where the Tories have run into the buffers. Their ideal constitution provides a strong central executive, run by Conservatives, leading by powerful but invisible wires across a spider's web to miscellaneous local boards, answerable to customers. Thus you have schools opting out of citizen-elected local authority control, to be run by appointed school-elected governors. National Health Service Trust hospitals opt out of (unelected) area health authority control. Housing associations replace council housing departments.

The pattern is not in itself unattractive, but it leaves a void between Whitehall and the various on-site governors. If they were directors of private companies you could say that the customer was in eventual control. But they are governors of public services, publicly-financed. The minister ultimately responsible for their appointment can control them. Citizens are deprived of the opportunity to influence them through local elected representatives. Customers have nowhere else to go. (An attempt to relate consumers of local services to payers of local taxation failed. It was called the poll tax.)

The destruction of local government, the refusal to recognise Scottish aspirations for home rule, the persistent reiteration that central government knows best are products of the same mental process. The elected dictatorship decides; consumers elect it, and reign supreme. It is this cast of mind that has led to the impasse on an otherwise broadly sensible set of NHS reforms. and given Labour the edge on education. It is this failure of the imagination that has led the Tories into their condition of nervous near-exhaustion in Blackpool this week. If you love them, go out and spend money, for a concerted rush to the shops, preferably before Christmas, is what they need to ensure that they triumph for a fourth time. Now is the time for all good consumers to come to the aid of the party.

LETTERS

Manufacturing horizons must be long-term

From Mr P K V Shah.

Sir, I find it strange that Britain's lack of commitment to manufacturing is so prevalent within both the City and government. The latest rumours surrounding the break-up of British Aerospace give me great concern in that the City is only interested in generating fees for the merchant bankers, lawyers, accountants, consultants and analysts.

There is no real permanent wealth creation in acquisitions and mergers of these dimensions. Manufacturing is wealth creation in a long-term horizon. The fact that BAe performed badly in one year does not by itself mean anything. Manufacturers have to be given a long-term horizon and this BAe episode is just another example of the City's attachment to short-termism. No wonder British manufacturing is in such a sorry state. With friends like the government and the City, who needs enemies?

P K V Shah,
Blowspeed Industrial Mouldings,
Sandwich Industrial Estate,
Ramsgate Road,
Sandwich, Kent

Notification

From Mr D R Mackness.

Sir, Mr Neil Ostram's desire (Letters, September 28) for timely, accurate and freely available shareholder information is wholly supported and subscribed to by MTM.

We were surprised, therefore, to read of his contention that an MTM director's share dealing was noted in the Weekend FT on September 13 "but not made public". In fact, in line with required practice, the transaction was announced to the Stock Exchange immediately on its completion – on Friday, September 17 – and communicated to the press.

D R Mackness,
administration director,
MTM,
Rudby Hall,
Hutton Rudby,
Yarm, Cleveland

Fax service

LETTERS may be faxed on 071-873 5938. They should be clearly typed and not hand-written. Please set fax machine for fine resolution.

Free market ethos could be disastrous for NHS

From Mr Bryn Glover.

Sir, Your editorial, "Reforming the NHS" (October 4), was the triumph of ivory-towered idealism over practical reality. The greatest error being made is to expect the same forces that impose market discipline in markets that are notionally free to operate equally on a so-called internal market which is principally governed by centrally imposed cash limits – especially when the real, inflation-corrected and demographically corrected value of those cash limits has diminished year by year.

Whether competition in an open market produces efficiency is not at issue here; but to operate competitively within national and regional rigid limits produces quite different consequences. Many products of the market ethos have emerged over the years – efficiency, built-in obsolescence, ability to declare bankruptcy, rationalisation – and may be acceptable in the world of consumer goods. But in health care, they would be disastrous, even individually fatal.

You accuse the Labour party of dishonesty and irresponsibility. Those are words that spring to mind as you dismiss – and understate – the adverse effects of trusts as "teething problems" and glibly offer the toothless Citizen's Charter as a cure. These problems are not "teething", they are inherent; you should pay more heed to the views of all those intimately involved in the NHS, and be less ready to dismiss their concerns as self-interest. People who choose underpaid careers in the NHS generally operate from different motives than greed and self-interest.

Both government and opposition accuse each other of dishonesty on the question of whether it is the Conservatives' intention to "privatise" the NHS. The fact is that both are telling the truth – it simply depends on the definition of "NHS".

The separation of purchaser and provider enables the government to promise that the NHS will not be privatised, because what they mean by the NHS is the purchaser. This will continue to disburse the centrally-provided, cash-limited funds for which the provider will compete. There is no doubt, however, that they intend fully to privatise the providers – the only way to make any sense of the astonishingly complex and bureaucratic accounting systems imposed on us is within the context of an independent (ie: privatised) status.

Labour thinking, however, while matching the government about purchaser and provider with strategic and operational boards, does not separate either of these functions from an overall NHS.

In Tory terms, the service is the provision of resources; in Labour terms, the service means resources plus the means by which they are delivered. Political "truth" often depends on definitions.

Bryn Glover,
chief medical technical officer,
department of nuclear medicine,
Leeds Infirmary

Fiscal drag and inheritance tax

From Prof D R Myddelton.

Sir, If politicians want to win some votes by promising to abolish inheritance tax, for goodness sake let them do it. The yield is only about 2 per cent of total taxes.

At least your leader ("Death and the taxman", October 3) suggests that the threshold above which the 40 per cent tax is charged – currently £140,000 – should be kept under review. "Otherwise," you say, "fiscal drag can extend its reach further down the wealth scale than is wise."

I wonder if that may already have happened? In 1946, with a newly-elected socialist government, the 40 per cent band (one of no fewer than 25 estate duty bands in those days) started to apply when an estate exceeded £150,000.

But since by now the pound has lost nearly 95 per cent of its 1946 purchasing power, the equivalent in today's money would be about £2.75m.

D R Myddelton,
professor of finance and accounting,
Cranfield School of Management,
Cranfield, Bedford

The transition to 'business' in the Asian community

From Mr Rohit Barot.

Sir, With reference to Khozem Merchant's profile (Management, September 24) of Asian businesses and their phenomenal spread in the M25 orbit in the fast-moving consumer goods sector, I have been struck during my fieldwork among Indians in the early 1970s and mid-1980s by the rise of "business" as both an economic as well as a social and cultural category.

Among the Hindus of the Swaminarayan movement, I have come across a number of instances of rags to riches. The rise of businesses is well reflected in Indian social gatherings. In the 1960s and 1970s, when you were introduced to other Indians, you asked them what work did they do. In the 1980s the question has been, "What business do you do?" There is no doubt that transition from wage labour and paid employment to self-employment has been a distinctive feature of Indian settlement in Britain in the last 30 years.

Although such a profile may appear rosy, it is not without a few thorns. The experience of prejudice and discrimination has played no small part in stimulating interest in self-employment. Nor has self-employment proved to be a salvation for everybody and may have ruined family life for those who do not have access to family labour power.

Although the Gujarati Indians have transformed the economy of places such as the inner city in Leicester, the cost of failure and return to factory work has not been uncommon for some. In situations where the volume of business is relatively static, the businesses can barely operate beyond subsistence and the actual gain for members of a family involved in such an enterprise may be meagre, if not within the M25 ring surely outside it. Further, the current recession is bound to have affected Indian businesses no less than businesses in general.

Rohit Barot,
Centre for the Study of Minorities and Social Change,
Department of Sociology,
University of Bristol

FINANCIAL TIMES
Tuesday October 8 1991

US and Canadian companies make spectacular progress in capping blazing oil wells

UK teams beaten to Kuwaiti contracts

By Mark Nicholson

A BRITISH effort to douse Kuwaiti oil well fires may lose to US and Canadian teams which have already made spectacular progress in capping hundreds of blazing wells.

The Kuwait British Group (KBG) – a consortium of Wimpey, Taylor Woodrow and Amec formed specifically to tackle Kuwait's oil fires – has not yet started work on 80 wells due to begin this month.

The consortium was contracted to tackle fires in the northern Sabriya oilfield under a £60m ($104m) contract signed with Kuwait last month.

Contrastingly, some 570 of the 730 wells detonated by the Iraqis have been capped by more than 30 firefighting teams from other countries. The Kuwaiti government expects all fires to be out by mid-November – far sooner than its initial estimate of next March.

KBG subcontracted Neil Adams, a Houston-based "blowout" team, to carry out the specialist task of fighting fires at the wellhead, but work will not start until Saturday. The consortium says capping will take until January.

Kuwait, however, wants capping completed earlier and appears set to allow US and Canadian teams to begin work in Sabriya. Safety Boss, a Calgary-based team that has doused almost 200 fires alone, has already extinguished a few wells in Sabriya. A spokesman for the company said Kuwait had asked it to stand by for more work.

The fact that KBG has not yet started – and that the actual wellhead firefighting will be conducted by US rather than British workers – has infuriated many UK oil companies.

"The British oil industry will be a laughing stock if we don't put out any wells," said Mr Brian Simpson, managing director of Alba Oil Services, an Isle of Man company specialising in supplying oil personnel.

Mr Simpson, who has been in Kuwait for six months seeking oil fire-fighting work for his company, accuses KBG of unnecessary delays in starting work.

He believes the job should have gone to oil companies rather than the consortium trio, which are better known for construction and civil engineering.

Wimpey, Amec and Taylor Woodrow maintain that extinguishing oil fires is a straightforward engineering task that does not require oil industry knowhow.

The opposition UK Labour party intends to raise the issue next week in the House of Commons, when it will question the role of the Department of Trade and Industry in backing the British bid to tackle Kuwait's oil fires. "These are important issues of DTI competence that the government must answer," said Ms Marjorie Mowlem, Labour spokeswoman on trade affairs.

KBG conceded that other teams will be directed to work in Sabriya. "Neil Adams is saying they'll be finished by the end of January and the Kuwaitis are saying November – the two aren't compatible," a spokesman said.

However, the group said it is not worried about losing out on the firefighting element, claiming that this accounts for only 25 per cent of the contract value – the rest covers the restoration of oil pipelines and gathering centres, and the preparation of the oilfield to resume production. "We're not losing out in terms of our bottom line," said a KBG spokesman.

Most of the wells have been controlled by the first blowout companies into Kuwait, which began work in March: US groups Red Adair, Boots & Coots and Wild Wells Control, and Canada's Safety Boss.

The 33 firefighting units already in place include teams from Romania, China, Hungary, Iran and Kuwait itself.

KBG was among the last to finalise a firefighting contract, signing only on September 4. This was in spite of the fact that talks began in April after a flag-flying visit to Kuwait by British executives led by Mr John Wakeham, the UK energy minister.

The consortium will not comment on why the contract took several months to conclude. The deal was signed only after the consortium spent six weeks surveying well damage and estimating the costs of repair – the only firefighters to undertake such a lengthy study.

THE LEX COLUMN

Another hole in Eurotunnel

Yesterday's interim report from Eurotunnel suggests that the risk of commissioning a complex train set may be just as great as that of digging a hole in the ground. Cost overruns are hardly a novel experience for Eurotunnel's strong-nerved shareholders. Even they, however, are likely to wince at the scale of the latest cash outflow – £450m including lost revenues – which will result from shuttle design changes imposed by the two governments.

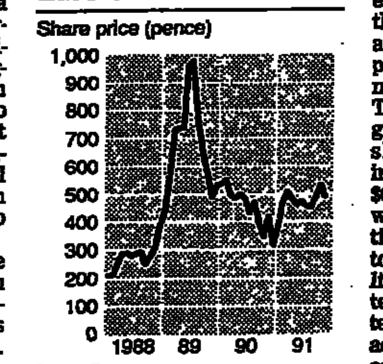
It would be unfair to assume that further upsets will be on this scale. If they were, Eurotunnel would be back with its begging bowl by March 1993. Nevertheless, the funding margin, or financial cushion, has almost halved since the beginning of the year. No wonder Eurotunnel's Sir Alastair Morton is gratefully lining up a further £163m of borrowing from EC coffers.

The main uncertainty at this point is the relationship with the building contractors, which appears to have worsened. The latter may be chancing their arm, but there remains a worryingly large gap between the £850m or so which Eurotunnel has probably budgeted to pay and the £1.4bn which is now claimed. The optimists point out that tunnelling work was also behind schedule at one stage and that going slow on the mechanical and electrical installations is in nobody's interest. It is further argued that revenue projections are highly conservative, and that market growth need only be a fraction of what it has been in the last five years to reach the stated targets. That in turn should lower the peak funding requirement, which has now risen from £7.6bn to £8.05bn.

Postponing the first dividend payment into the next millennium did nothing to help the shares, which shed 28p yesterday to 496p. Net present value calculations could justify a price in the 550p-600p range. But emotion, rather than fundamentals, has always been the main driving force in the market. Notwithstanding dividend payments loaded towards the end of its 50-year life, Eurotunnel may one day turn into a dull utility. For the next couple of years, though, investors look assured of the same bumpy ride as before.

FT-SE Index: 2,596.2 (-28.4)

Eurotunnel



Source: Datastream

Markets

Yesterday's 28-point fall in the FT-SE may have been a predictable response to the latest clutch of opinion polls. It also represents an opportunity to ponder the way in which the market will respond to the UK's eventual economic recovery. Whatever the validity of the latest IMF projections that this will be more robust than the City consensus suggests, dividends and therefore share prices may be slower than normal to adjust.

This at least is the conclusion to be drawn from Robert Fleming's latest analysis suggesting that dividend cover across the whole UK market of some two times is now some 10 per cent lower than at the bottom of the last cycle. Even as earnings recover, those companies which have not raised new funds from their shareholders may be anxious to rebuild cover rather than raise their payout. That puts a different gloss on the argument that equities are now undervalued because their historic yield is now roughly half that on gilts.

Westinghouse

Those employees of the US conglomerate Westinghouse who are not among the 4,000 due to lose their jobs in the latest restructuring will need a lot of faith in their company. As part of the clean-up of its financial services business Westinghouse is to issue $400m worth of new equity to its pension fund over the next two years in lieu of a cash contribution. That is not wholly without precedent in the US, and may be an elegant solution for a company which has already tapped the capital market once this year to make good its losses in financial services. But for the staff, it represents a case of double jeopardy.

A further write-down on the property loan portfolio had been widely expected, which explains why Westinghouse Electric shares have underperformed the rest of Wall Street by 25 per cent since the start of June. Yet the figure of $1.68bn was significantly higher than expected. It has necessitated the issue of $900m of equity in all to enable the parent company to meet gearing covenants at Westinghouse Credit. Though the cash strain on the group should be relatively short-lived, the capital increase, coming on top of a $600m issue earlier this year, will be seriously dilutive at a time when earnings have yet to recover from the recession. It was easy to forget amid yesterday's drama that third quarter operating profits from other activities fell by 39 per cent compared with last year.

The likes of British Aerospace in the UK have learnt the hard way of the dangers of diversifying into real estate. Westinghouse's experience is a reminder that this lesson is one with broad application. Even so, there was no initial explanation offered yesterday of why the group was making such a large additional charge so soon after the $975m provision announced in February.

Invergordon

The decision by the UK competition authorities not to oppose American Brands' bid for Invergordon throws the whole game open again. As long as a referral was possible, no other bidder was going to make a move. All the possible candidates, after all, will have run an eye over Invergordon long ago. The question is rather how much it is worth to deny Invergordon to a competitor. That in turn depends on a number of imponderables, including the value placed by the other big players in the Scotch industry on Invergordon's stocks at a time when demand for Scotch in world markets is plainly slackening.

On the conservative assumption that no other bid is forthcoming, the valuation of the shares during the end-game requires a certain caution. Since the bid was launched two months ago, the price has never been less than 8 per cent above the 225p bid. At yesterday's 267p it is 19 per cent above it. The sensible tactic for American Brands would be to raise its offer to the market price and let the market sweat it out. There seems little chance of a bid on those terms being turned down by the institutions. But the prospect of a counterbid, though logically as likely as it was at the outset, seems to be fading in the market's mind as time goes on.

Cavaco Silva promises continued growth following election victory

'No austerity' pledge for Portugal

By Patrick Blum in Lisbon

PORTUGUESE were assured yesterday by their prime minister, Mr Anibal Cavaco Silva, that they would continue to enjoy one of Europe's highest economic growth rates. There would be no austerity, he said, in a speech celebrating the resounding victory in Sunday's general election of his Social Democratic party (PSD).

The country had voted for "stability, progress and development," he said. However, he warned of "great challenges" caused by international uncertainties and developments in Europe. "We are aware of the difficulties and are confident of overcoming them."

Mr Cavaco Silva, often accused of arrogance by his opponents, extended an olive branch to the opposition, saying he was open to a "constructive dialogue". Such co-operation has not been easy in the past and the opposition fears the PSD's historic second consecutive absolute majority will make its role more difficult.

Prime minister Aníbal Cavaco Silva gets a celebratory hug from his wife Maria

The prime minister, for his part, has been given a free hand to continue with his liberal market policies for the next four years. With most results in, apart from eight seats including four reserved for emigrant voters, the PSD has won 50.4 per cent of the vote (compared with 50.2 per cent in 1987) and is assured of at least 130 of the 230 seats in a national assembly recently reduced from 250 seats.

The Socialist party led by Mr Jorge Sampaio trailed with only 29.2 per cent of the vote and 69 seats, although its share of the vote was up 7 points on its showing in the 1987 election. The Socialists had campaigned on growing social inequalities and what they saw as a danger to democracy should the PSD win another majority. Mr Cavaco Silva's upbeat message, emphasising success and stability, clearly proved more convincing.

The smaller parties also fared badly. On the left, the hardline Communists saw their vote fall from 12.4 per cent in 1987 to 8.8 per cent and their parliamentary representation cut from 31 seats to 17. Mr Alvaro Cunhal, the veteran party leader, swore they would live to fight another day, but Mr Carlos Carvalhas, his deputy, admitted their vote had been affected by developments in eastern Europe and the Soviet Union.

The centrist Democratic Renewal party faces extinction, and on the right, the conservative Christian Democrat CDS barely maintained its 4.4 per cent score in 1987, although it gained five assembly seats, one more than last time. Mr Diogo Freitas do Amaral, a former deputy prime minister and a popular politician, has resigned as CDS leader in view of the party's failure to win back voters lost in 1987 to the PSD. The party may now face internal strife over the succession.

The only surprise was the single seat won by the National Solidarity party, which was created earlier this year and represents mainly pensioners. More worrying is the high number of abstentions at 32 per cent – the highest level since the 1974 revolution – suggesting a large pool of disenchanted voters.

Mr Cavaco Silva will remain as head of a caretaker government until he is formally appointed prime minister later this month. Few changes are expected in the cabinet which has been actively preparing for Portugal's presidency of the European Community starting on January 1. Continuity will be the hallmark of the new government.

Kurds flee for Iran as fighting in Iraq worsens

By Mark Nicholson and Victor Mallet in London

THOUSANDS of Kurds were reported to be fleeing towards Iran yesterday after the most serious clashes in northern Iraq since allied forces protecting the Kurds withdrew from Iraqi territory in July.

Fighting between Iraqi troops and Kurdish *peshmerga* guerrillas, which began south of Suleimaniyah on Saturday, appeared to be intensifying yesterday as Iraqi troops closed in on the town.

The Patriotic Union of Kurdistan, one of the two main Iraqi Kurdish guerrilla groups, described the weekend attacks by the Iraqi army as a large-scale offensive which was "part of an strategic attempt to consolidate the area that the authorities wish to exclude from any future, autonomous Kurdish region".

Baghdad's efforts to "Arabise" the oil town of Kirkuk with Arab settlers and keep it out of Kurdish hands have been a longstanding obstacle in the way of an autonomy agreement between the Kurds and the central government.

Kurdish forces in Suleimaniyah executed at least 60 unarmed Iraqi soldiers yesterday, according to Mr Kurt Schork, a Reuter correspondent who witnessed the event. The captured soldiers, kneeling inside a building with their hands on their heads, were shot at point-blank range.

He also reported that residents were fleeing and that the outskirts of the city were being bombarded by Iraqi forces. Dozens of civilians, Kurdish guerrillas and Iraqis were killed, he said.

A spokeswoman for Médecins sans Frontières, the French aid group which runs a small hospital in the area, said aid agencies working in the area believed up to 50,000 Kurds had already fled to seek sanctuary at Halabja, near the Iranian border.

She said that the group's hospital at Sayed Sadiq, north of Halabja, was already overflowing with civilian wounded and that the Iraqi army was bombarding the area around Sayed Sadiq and Suleimaniyah with artillery and helicopter gunships.

The fighting, which residents of Suleimaniyah claim follows an unprovoked attack on the Kurdish-held city and other towns by Iraqi forces, has so far remained south of the 36th parallel.

Fighting north of that line could prompt intervention by allied air forces stationed in eastern Turkey, the residue of the Operation Poised Hammer force installed to deter Iraqi aggression against the Kurds earlier this year.

Mr Jalal Talabani, the head of the PUK, yesterday appealed to world leaders, including US president George Bush and Mr John Major, the British prime minister, for assistance against Iraqi "repression".

"The Iraqi government is intensifying its policy of terrorising Kurdish people to force them from their homes and from their lands," he said in an open letter.

Croatia to seek EC recognition today

By David Gardner in Brussels and Our Foreign Staff

CROATIA will ask the European Community to recognise it as an independent country today, Mr Zvonimir Separovic, its foreign minister, said yesterday.

After meeting Chancellor Helmut Kohl and Mr Hans-Dietrich Genscher, the German foreign minister, in Bonn, Mr Separovic said the appeal for recognition would come from the Croatian parliament.

His announcement came on the eve of the resumption of EC-sponsored peace talks in The Hague, and as international protests mounted over the Serb-dominated federal army's onslaught on Croatia.

Soviet president Mikhail Gorbachev sent a strongly worded message to Yugoslav political and military leaders warning the army not to attack Croatian cities.

The message sent via the Soviet ambassador in Belgrade, said: "At this alarming moment, the Soviet leadership appeals urgently to the Yugoslav leadership and the army high command to show maximum responsibility and restraint.... to bring about an immediate end to military activity."

The Croatian foreign minister said he had won the support of Mr Kohl and Mr Genscher for EC recognition of both Croatia and neighbouring Slovenia, which were due to press ahead with their moves towards independence after an EC-brokered three-month moratorium expired at midnight last night.

Mr Genscher said he told Mr Separovic that Germany would prepare tougher guidelines on a trade boycott to be imposed if the Yugoslav army did not stop attacking Croatia by the EC's deadline of midnight on Monday. Although Germany has advocated recognition since August, the consensus within the EC has been that this would aggravate a worsening problem, in which Serbia and the Serbian minority within Croatia have to be part of the solution.

At last Friday's meeting of the peace conference in The Hague, the EC and Yugoslav parties said explicitly for the first time that negotiations were now "within the perspective of recognition of the independence of those republics wishing it, at the end of a negotiating process conducted in good faith."

But they agreed that this formula, amounting to conditional recognition, should lead to a "loose association or alliance of sovereign or independent republics", and the EC signalled that it could only contribute to Yugoslavia's economic reconstruction on that basis. The two other principles for a general settlement of the Yugoslav conflict were that there be no unilateral changes of borders, and that minority rights be fully guaranteed.

EC officials said last night that their mediation efforts would go ahead despite the upsurge in fighting, and even if the Community decides today to carry out its threat to cut off Yugoslavia from aid, and, through the UN, trade. Mr Franjo Tudjman, the Croat president, confirmed last Friday that Croatia would be instituting its own currency and customs regime from today

Thatcher may disown Major deal on single currency

Continued from Page 1

vast majority of voters would support her if the issue were tested in a referendum.

The former leader has said that the government should not agree irreversible constitutional changes without spelling them out to the electorate in a national referendum.

Some of her supporters believe that a revolt led by Mrs Thatcher could force Mr Major to accept her proposal for such a referendum.

The conference delegates, long Mrs Thatcher's staunchest supporters within the party, are bound to give her an enthusiastic reception. Many resent the manner in which she was forced by Conservative MPs to stand down.

Her entrance to Blackpool's Winter Gardens, alongside the prime minister, will be carefully stage-managed to reinforce an impression of continuity between the two leaders and to ensure that Mr Major is not upstaged.

Mrs Thatcher has not scheduled any speaking engagements during a stay in Blackpool which is scheduled to last just one day, but she is expected a attend a fringe meeting hosted by her strongest supporters. Mr Major will praise her achievements and point out that victory at the next election is vital to safeguard her inheritance.

WORLDWIDE WEATHER

		°C	°F			°C	°F			°C	°F			°C	°F			°C	°F
Ajaccio	F	19	66	Berlin	S	16	61	Caracas	C	28	82	Faro	S	25	77	Islamabad	F	30	86
Algiers	S	26	79	Biarritz	S	16	61	Casablanca	F	24	75	Florence	R	14	57	Istanbul	S	20	68
Amsterdam	F	13	55	Bombay	S	32	90	Chicago	S	3	37	Frankfurt	F	17	63	Jakarta	F	34	93
Athens	F	22	72	Bordeaux	S	16	61	Cologne	C	14	57	Geneva	S	13	55	Jersey	S	15	59
Bahrain	S	31	88	Boulogne	S	14	57	Copenhagen	C	13	55	Gibraltar	C	21	70	Johannesburg	S	28	82
Bangkok	F	31	88	Brussels	C	11	52	Corfu	F	25	77	Glasgow	F	13	55	Lima	C	21	70
Barcelona	S	19	66	Budapest	S	23	73	Dallas	S	10	50	Helsinki	S	13	55	Lisbon	S	23	73
Beirut	T	27	81	Buenos Aires	C	14	57	Dublin	F	14	57	Hong Kong		–	–	London	C	15	59
Belfast	S	13	55	Cairo	F	28	82	Dubrovnik		–	–	Innsbruck	F	17	63	Los Angeles	Fg	16	61
Belgrade	S	24	75	Cape Town	F	19	66	Edinburgh	F	12	54	Inverness	S	14	57	Luxembourg	C	13	55

		°C	°F			°C	°F			°C	°F			°C	°F			°C	°F
Madeira	C	21	70	Milan	C	15	59	Nicosia	S	25	77	Salzburg	S	18	64	Tenerife	C	25	77
Madrid	S	19	66	Montreal	F	5	41	Oporto	S	19	66	San Francisco	S	12	54	Tokyo	R	19	66
Majorca	F	23	73	Moscow	F	14	57	Oslo	S	12	54	Seoul	S	18	64	Toronto	S	2	36
Malaga	S	23	73	Munich	S	17	63	Paris	S	14	57	Singapore	F	31	88	Tunis	F	25	77
Malta	F	26	79	Nairobi	C	26	79	Peking	S	24	75	Stockholm	S	14	57	Valencia	S	21	70
Manchester	C	13	55	Naples	T	16	61	Prague	S	16	61	Strasbourg	C	15	59	Venice	S	22	72
Manila	F	33	91	Nassau	F	31	88	Reykjavik	F	5	41	Sydney	S	22	72	Vienna	S	21	70
Melbourne	C	16	61	New Delhi	S	32	90	Rhodes	R	18	64	Taipei	C	25	77	Warsaw	S	30	86
Mexico City	C	20	68	New York	S	8	46	Rio de Janeiro	R	33	91	Tangier	S	26	79	Washington	S	8	46
Miami	C	25	77	Nice	F	18	64	Rome	T	17	63	Tel Aviv	S	27	81	Zurich	F	15	59

Temperatures at midday yesterday C–Cloudy Dr–Drizzle F–Fair Fg–Fog H–Hail R–Rain S–Sunny Sl–Sleet Sn–Snow T–Thunder

FINANCIAL TIMES
COMPANIES & MARKETS

Tuesday October 8 1991

INSIDE

Hongkong Bank under review

Hongkong and Shanghai Banking Corporation and various subsidiaries have been placed under review for possible downgrading by Moody's Investors Service, the US credit rating agency. Page 23

Insurance broker sold for £35m

TSB, the sixth largest UK banking group, has sold Hill House Hammond, its 133-branch retail insurance broker, to Norwich Union, the UK insurance group, for £34.5m ($60m). "This was a splendid offer and we decided to accept it," said Mr Don McCrickard, TSB chief executive. Page 28

Defeat for Penser

Mr Erik Penser, the Swedish financier, appeared to have lost his fight to regain ownership of Nobel Industries. Page 22

Crucial meeting for Polly Peck

The administrators of Polly Peck International, the collapsed electronics and fruit conglomerate, go into a crucial meeting today with the committee representing the group's creditors. Mr Asil Nadir (left), the Polly Peck International chairman, yesterday lost a battle in the High Court in London to have contempt proceedings, launched against him by his personal creditors, struck out. Page 27

All clear for UK drinks bid

Whyte & Mackay, the drinks subsidiary of American Brands, the US tobacco group, was yesterday given the all-clear by Mr Peter Lilley, the UK trade and industry secretary, for its £286m ($497m) hostile bid for Invergordon Distillers. Mr Lilley announced that, on the recommendation of the UK Director-General of Fair Trading, the bid would not be referred to the UK Monopolies and Mergers Commission. Page 28

Metal mating season begins

Metals producers, consumers, traders and merchants have converged on London to celebrate the start of the mating season (the endearing term they use to describe the industry's contract negotiations) and pay their respects to the most international market in the world: the London Metal Exchange. Consumers go into the mating season negotiations holding all the best cards. Page 29

Japan lifts the world index

Japan consolidated its newly found position as the locomotive for the index of world stock markets. Back Page

Market Statistics

Companies in this issue

Chief price changes yesterday

FRANKFURT (DM)				PARIS (FFr)			
Rises				**Rises**			
DLW	505	+	9	Gaumont	740	+	25
Sud Chemie	578	+	13	Radiotechn	532	+	22
Falls				Sefimeg	501	+	11
Asko	832	–	14	**Falls**			
Bilfing Berg	850	–	40	Cetelem	596	–	19
Linotype-Hell	405	–	22	Ecco	385	–	12
Springer Axel	552	–	13	Fonc Lyonnaise	661	–	14

NEW YORK ($)				TOKYO (Yen)			
Rises				**Rises**			
Amgen	54¼	+	1⅜	Fuji Kosan	585	+	45
IBM	99	+	¾	Gajoen Kanko	498	+	70
Falls				Nihonbashi Ware	1370	+	110
Am Express	20⅞	–	¾	Tokyo Rika	600	+	45
Gen Electric	67⅝	–	¾	Topy Inds	850	+	63
Genetic Inst	38¼	–	1¼	**Falls**			
Westinghouse	19¼	–	2½	Nihon Park	1060	–	80

New York prices at 12.30.

LONDON (Pence)							
Rises				Brit Aerospace	402	–	13
Brent Walker	20½	+	4¾	Brit Airways	187	–	5
First Nat Fin	53	+	9	Costain	93	–	8
Gt Southern	252	+	12	Eurotunnel Uts	496	–	28
Greenacre	9¾	+	2¾	Farline Boats	538	–	49
Invergordon	267	+	10	Gen Accident	528	–	16
Medeva	195	+	6	Kunick	26½	–	9
Pelican	27	+	4	Macarthy	272	–	14
Reliance Sec	288	+	9	Quadrant	57	–	6
Falls				Royal Ins	338	–	15
ASDA	45	–	4	Sainsbury (J)	350	–	7
Alan Paul	69	–	9				
BAT Inds	651	–	13				

Cost of Channel tunnel rises to £8bn

By Andrew Taylor in London and William Dawkins in Paris

THE COST of building the Channel tunnel has risen by £446m to more than £8bn ($13.8bn) to meet safety requirements and because of a fall in traffic estimates during the tunnel's first few years of operation.

Eurotunnel, the tunnel's operator, said yesterday that the payment of the first dividend to shareholders was likely to be delayed to the year 2000, a year later than previously expected.

The group also said it had become embroiled in a dispute with contractors over who should pay for previously announced cost increases.

Eurotunnel's share price fell 28p to 496p following the publication of revised cost and revenue estimates by Eurotunnel chairman, Mr André Bénard, and Sir Alastair Morton, chief executive.

The group raised a further £2.7bn from shareholders and banks in November, taking the total amount of finance for the project to £8.7bn. Eurotunnel now says funding, following the latest increases in costs, will peak at £8.05bn in 1996. Mr Bénard emphasised that Eurotunnel did not need to raise new finance. He said revised traffic forecasts expected a higher number of passengers, freight and cars to use the tunnel in later years, more than compensating for any early shortfall.

Design changes requested by the Anglo-French inter-governmental safety commission would add £109m to costs. There would also be delays in providing a full fleet of redesigned wagons. This would restrict Eurotunnel's service for the first three months, losing the group about £100m in revenue.

Sir Alastair said contractors were up to six months behind schedule in installing railway track, cabling, pipework, cooling and signalling systems but he was confident that contractors could achieve the target of June 15, 1993, for the tunnel's opening.

Contractors to Eurotunnel submitted a 78-page document setting out the broad detail of claims for extra payments of £800m and an additional fee of £160m at 1985 prices.

Eurotunnel has rejected the contractor's "global" application for costs and says they must submit details for individual items.

● Speculation is mounting that the UK government may be preparing to overrule British Rail's choice of route for the proposed high-speed link between the tunnel and London, writes Richard Tomkins.

Mr Malcolm Rifkind, transport secretary, is expected to make an announcement about the route next week.

Lex, Page 20

Peugeot declines 54% in first half

By William Dawkins in Paris

PEUGEOT, France's largest car group, yesterday provided the latest evidence of the impact of the recession on the European car industry, with a 54 per cent decline in profits for the first half of the year.

The fall compares with the 65 per cent drop in profits announced over the same period by Renault, Peugeot's more indebted state-owned rival. Peugeot, which also embraces the Citroën marque, attributed the fall to a steep decline in demand in France, Britain and Spain.

The decline was softened by exceptional growth in Germany, stimulated by the release of pent-up demand from the east of the country.

Net profits fell from FFr4.95bn ($860m) in the first half of 1990 to FFr2.27bn, or 2.8 per cent of turnover, in the first six months of this year. Sales fell by 6.3 per cent over the same period, from FFr85.73bn to FFr80.3bn.

All the sales decline took place during the first quarter of the year, since sales in the second quarter of 1991 had stabilised at around the same level as the corresponding period in 1990, said Peugeot. First-half pre-tax profits fell from FFr7.98bn to FFr3.83bn.

Peugeot forecast that full-year sales would recover to around the same level as 1990 – FFr159.9bn – on the grounds that it expects its main markets to improve in the final months, and on the strength of the "very promising commercial launches" of its two new models, the Peugeot 106 and Citroën ZX small hatchbacks.

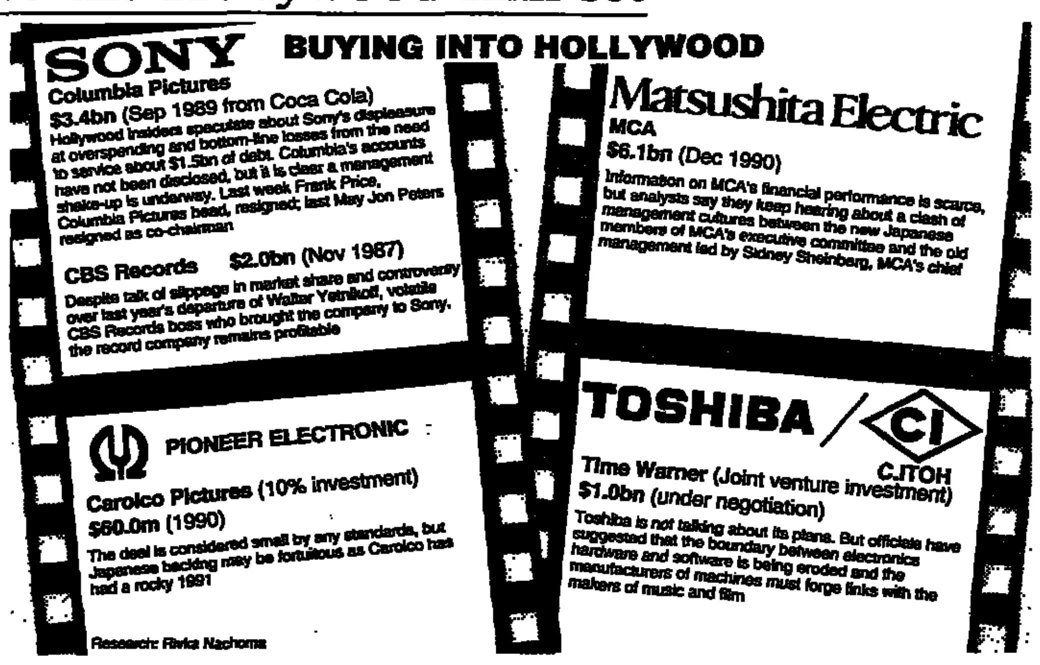
The group profits outlook, however, is less promising. Peugeot said full-year net earnings should be more than double those in the first half, implying net earnings of at least FFr4.54bn, which would be 50 per cent down on the FFr9.2bn net profits made in the whole of 1990.

In spite of the downturn, Peugeot continued to increase its investments, up 4 per cent to FFr7.3bn gross, or FFr6.98bn net of asset sales. Its working capital needs, by contrast, *fell* by FFr1.89bn over the same period, allowing Peugeot to reduce its net debts by around FFr1bn, to FFr7.26bn.

Peugeot expects significant cost reductions and shorter development times from the recent merger of the design and technical planning departments of its two marques, although the group emphasised that the identity of Peugeot and Citroën would be kept separate.

Stefan Wagstyl on changes to the Hollywood film set

Japan seeks its fortune in Tinsel Town



It is a tribute to the magic of Hollywood that it has captivated even Toshiba, the most strait-laced of Japanese companies.

Toshiba, which last week confirmed it was considering buying a stake in Time Warner, the US owner of Warner Brothers film studios, is better known for its nuclear reactors than its interest in Tinsel Town. Some electronics executives in Tokyo say Toshiba was merely imitating Sony, which paid $3.4bn (£1.95bn) for Columbia Pictures Entertainment, and Matsushita Electric, which bought MCA Communications for $6.1bn.

Toshiba is not talking about its plans. But some Toshiba officials have in the past spoken enthusiastically about the same ideas which motivated Sony and Matsushita – that the boundary between electronics hardware and software is being eroded and that manufacturers of machines must forge links with the makers of music and films.

However, other Toshiba executives wonder whether such a vision can ever be realised. And even if it can, they doubt whether a pact between Japanese electronics engineers and Los Angeles film producers is the best way to bring it about.

The idea of synergy is not new. RCA of the US once straddled the electronics and entertainment industries. In the UK, Thorn bought EMI in 1979 with a view to showing EMI's music on Thorn's televisions – a plan which was later abandoned.

Sony and Matsushita are gambling on the hope that technology has now advanced to the point where opportunities for cross-fertilisation will begin multiplying. Film, video, high-definition television and computer games will all be possible outlets for a single piece of recorded material.

But the hard-headed chiefs of Toshiba do not seem to put as high a value on this grand vision. Sony and Matsushita each bought outright control of their Hollywood ventures. Toshiba plans to share any risks with C. Itoh, the trading combine. Together, the two companies are talking about an investment of $1bn. Reports in Tokyo suggest a plan to buy 12 per cent of Time Warner, but executives in New York say a joint venture investment is more likely.

The two Japanese companies have persuaded the debt-laden Time Warner, which originally sought a larger cash injection, that a Sony or Matsushita-sized investment was out of the question. Moreover, Toshiba and C. Itoh seem to be taking pains over negotiating exactly what kind of joint ventures they can establish with Time Warner. The main plan under discussion is for a jointly-owned cable television business in Japan, for which Time Warner would supply film material and know-how, C. Itoh general trading skills, and Toshiba electronics hardware.

"Toshiba is doing the same thing as Sony and Matsushita. But it is taking a different and more down-to-earth approach," says Mr Yoji Machida, an electronics industry economist at the Long Term Credit Bank.

Toshiba is by nature a conservative company, formed before the Second World War by a merger of light bulb and electrical machinery manufacturers and loosely absorbed into the Mitsui zaibatsu, or industrial grouping.

Modelling itself on General Electric of the US, Toshiba is bureaucratically divided into divisions which operate in different markets. Consumer products account for only 20 per cent of sales – compared with 40 per cent at Matsushita and more than 80 per cent at Sony.

> Toshiba is not alone in judging that the mega-deal may be a needlessly extravagant way into Hollywood

Toshiba puts technology first, taking great pride in its advances in semiconductor manufacture during the 1980s. By contrast, independent chip-making was almost an afterthought at Sony. As a Toshiba executive said this week: "Sony people are musicians. We are engineers."

The financial climate has changed since Sony bought Columbia. While Toshiba would have little difficulty raising funds for a $5bn acquisition, it would have to pay high interest rates to get it. The company has recently shaved 5 per cent off its Y250bn ($1.9bn) annual capital spending budget for the period to next March. Furthermore, Hollywood film studios are notoriously difficult to manage, even for Americans, as highly-paid stars and producers can easily change studios or go independent.

Sony and Matsushita have been careful to keep their distance from their investments. Matsushita is fortunate that MCA was profitable at the time of the acquisition and has remained so. But Columbia Pictures was losing money when Sony took over and is still in the red after financing costs.

Sony says this is in line with expectations as new films take time to produce but what did surprise Sony was the decision this June of Mr Jon Peters, who Sony hired to head Columbia, to go independent although he will continue making films exclusively for Columbia.

Toshiba is not alone in judging that the mega-deal may be a needlessly extravagant way into Hollywood. Pioneer Electronic, the consumer electronics company which is strong in laserdisks, last year paid just $60m for a 10 per cent in stake in Carolco Pictures, an independent producer with the Rambo and Terminator films to its credit. In return it secured the right of first refusal on recording Carolco films on to disk. Pioneer said its investment was "exactly appropriate for our purpose".

Sony and Matsushita executives feel that a company taking such a narrow approach could miss the unknown future benefits of allying software and hardware. A Sony official said: "You have to look at the benefits of synergy in a wide context. And we may not know for a long time. It took 10 years before we could see the full success of the video recorder or the compact disc."

The head of an independent Tokyo software company says Sony and Matsushita's ideas are too vague. What matters is whether the acquisitions are successful and profitable. If they are not, management problems will halt any synergy.

Fox gave brokers indemnities

By Richard Waters in London

THE London Futures and Options Exchange gave commodity brokers financial support to trade in its own contracts, making losses in the process that ran into hundreds of thousands of pounds, it emerged yesterday.

The exchange, known as the London Fox, was meant to give investors the chance to hedge their property investments or speculate on price movements in the property market.

However, it issued indemnities to brokers to encourage them to trade property futures contracts between themselves, to create the illusion of activity in what had been a moribund market since its launch in May this year. The exchange offered to underwrite brokers in case they sustained any losses in their trading.

Under section 47(2) of the Financial Services Act it is an offence, punishable by to up to seven years' imprisonment, to "act or engage in any course or conduct" which gives investors a misleading impression "as to the market in, or the price or value of any investments".

Mr Mark Blundell, the market's former chief executive and chairman of its property futures committee who resigned on Saturday, has admitted through his lawyers to "initiating" trading in the property futures market. He has denied that anything he did was for personal gain.

It also emerged that the Securities and Futures Authority, the regulatory body which uncovered the trading irregularities, is investigating the activities of at least four brokers over the affair.

They include Refco Overseas, the US commodities giant; Sucden (UK), an arm of the large French commodities group; and Marshall French & Lucas. They were among the eight designated brokers appointed by Fox when the property futures market was launched. The three firms each said they had been asked for information about their trading in property futures by the SFA.

Mr Martin Emery, managing director of Sucden (UK), said of Fox's property futures market, which was suspended last Wednesday: "It was a superb contract. The trouble was, it was not easy to get people to use it."

When asked whether cross-trades between brokers to create the illusion of activity in the market was a legitimate practice, he said: "As long as it doesn't affect the price, yes. Liquidity does not affect the price – whether you do 20 lots or 1,000 lots, the price is the same."

AT&T may set up UK operation

By Hugo Dixon in Geneva

AMERICAN Telephone & Telegraph, the largest US telecommunications group, may become a long-distance operator in the UK in competition with BT as part of plans to increase the proportion of its business outside the US to 50 per cent by the year 2000.

Mr Robert Allen, AT&T's chairman, said yesterday all the group's business units had a remit to expand internationally.

Although he had no specific plans to announce, he identified the recently-liberalised UK long-distance market as one possibility. He said the UK market looked attractive on the surface, although he had not studied it in great detail, and that entering the market would probably require a partner.

Mr Allen also said telephone monopolies throughout Europe should be abolished to achieve a single European market.

But, revealing a certain ambivalence over how aggressive AT&T should be, he said the company wanted partnerships with the post, telegraph and telephone groups (PTT).

"You have to get the local PTTs to co-operate one way or the other otherwise we cannot offer the service," he said.

Other possible areas for global expansion identified by Mr Allen were:

● The provision of global networks for multinational companies.

Such a move would compete with the Syncordia venture launched by BT, although Mr Allen said AT&T had been examining this possibility for some time. "Our main interest is in US-based customers who have interests around the world," he said.

"If we can do that well, we should be able to do it for foreign customers as well."

● Marketing the group's Universal credit card internationally. The card, which operates like a normal credit card as well as a telephone card, has won 11m customers in the US in the past two years.

● Buying stakes in foreign telephone companies which are privatised.

Mr Allen said AT&T wanted to sell equipment to such companies, but it also might be appropriate in some cases to take small shareholdings.

Penser defeated in Nobel battle

By John Burton in Stockholm

MR Erik Penser, the Swedish financier, appeared yesterday to have lost his fight to regain ownership of Nobel Industries, the chemical and defence group.

His defeat came as the Nobel board agreed to demands from Nordbanken, which controls the company, and other Swedish banks.

Late on Sunday night the board agreed to dismiss a team of international advisers examining strategies that would help Mr Penser, who is still the board chairman, to regain control of Nobel, which he lost in August after his creditor banks said he was unable to fulfil loan agreements.

The board also reaffirmed its approval of a financial package arranged by the banks to recapitalise the company. The banks had said Mr Penser's recent attempts to recover ownership of Nobel would jeopardise the financial plan to rescue the concern from the threat of bankruptcy.

"The ownership of Nobel Industries cannot be separated from the extensive series of agreements" reached among the banks to provide funding to Nobel, said Mr Bjorn Wahlstrom, the Nordbanken chairman, last week.

Mr Penser transferred his 70 per cent shareholding in Nobel to Nordbanken as part of the financial rescue package. The Nobel board cited "a possible liquidity crisis for the company" among other reasons for its decision to accept the banks' demand, made last week, that the consultants advising Mr Penser and the board be dismissed.

The trade union representatives on the Nobel board, the only members who supported Mr Penser on Sunday in resisting the banks' demands, alleged the banks would cut off financing to Nobel unless their demands were accepted. But there was also concern that foreign banks might stop lending to Nobel if the financial rescue package appeared to be threatened by a fight over the company's ownership.

Nobel will hold an extraordinary shareholder's meeting on October 25, during which it is expected a new board, nominated by Nordbanken, will assume leadership of the company.

Maxwell sells US directories business

By Raymond Snoddy in London

MAXWELL Communication Corporation yesterday sold its US directories business, part of Maxwell Macmillan in the US, to Reed International, the publishing company, for $145m cash.

The business includes two main divisions: Marquis Who's Who which publishes Who's Who In America and National Register Publishing, which publishes 17 business directories.

In the year to end-March, Macmillan's directories businesses earned operating profit of $13.3m on annual sales of $41m. The acquisition fits with Reed's strategy of expanding subscription-based reference books and data-base publishing.

Mr Peter Davis, Reed chairman, said in a statement yesterday that "the acquisition,

Robert Maxwell: keen to sell for good value

which has been subject to extensive due diligence, is expected to be accretive to earnings both in this financial year and in the future".

Reed intends to put the directory divisions in one company under its main US vehicle, Cahners Publishing. The directories and reference books will be transferred to electronic data bases and CD-Roms.

Mr Maxwell, chairman and chief executive of Maxwell Macmillan, expressed satisfaction with the price. He said this "confirms the board's policy of not selling any MCC assets other than for good value".

In the past three weeks MCC has announced the sale of Prentice Hall, a professional reference book company, to Thomson for $56.5m, and Pergamon Professional Books to McGraw-Hill for $12m.

MCC is selling assets to reduce the $3bn debt taken on to buy Macmillan and Official Airline Guides. More than $1bn has been repaid.

Reed was last night investigating apparent discrepancies in the book value of the business bought from Maxwell Communication Corporation for $145m (£83.5m) cash.

MCC said yesterday that the businesses had a book value of about $130m, giving MCC a trading profit of around $15m.

However, Reed was surprised to see the Maxwell statement because it had received warranties that the book value of the businesses was $158m.

Mr Kevin Maxwell, MCC chief executive, said last night that the statement had been checked by stockbrokers and was not misleading.

The difference in the two figures was because of "provisions".

INTERNATIONAL COMPANY NEWS IN BRIEF

STET units take stakes in Brazil telecoms

SOCIETA Finanziaria Telefonica Italian, the state-controlled telecommunications holding company, said yesterday that two of its subsidiaries have each acquired a 25 per cent stake in Victori Comunicacoes, the Brazilian telecommunications group, AP-DJ reports from Milan.

Financial terms not released.

STET said that its subsidiaries Italcable and Telespazio each acquired 25 per cent of the Brazilian group, which acts as a consultant and services manager in the telecommunications sector in Latin America.

As reported, last week STET announced it had won a $50m contract from Spanish telecommunications group Telebras to build a satellite telephone network in Brazil.

Benetton sets up Turkish venture

BENETTON, the Italian fashion-wear maker, has set up a joint venture with Turkey's cloth and fabrics producer Altinyildiz Holding to manufacture Benetton products, Reuter reports from Ankara.

Benkar, a subsidiary of Altinyildiz Group, has previously produced Benetton-licensed products, but the new venture will boost quality and expand the production variety, the firm said.

Daimler-Benz in Mitsubishi talks

SENIOR executives of Daimler-Benz and Mitsubishi Group will meet today and tomorrow near Stuttgart, southern Germany, to discuss possible joint business, a spokesman for the Japanese trading group said, Reuter reports from Tokyo.

"The meeting is aimed at seeking the possibility of joint projects rather than talking about specific projects," he said.

This will be the third meeting between the companies and follows talks in Singapore and Tokyo last year.

A meeting was scheduled for April this year, but postponed to this month.

Finnish bank watchdog claims KOP too optimistic in share deal

By Enrique Tessieri in Helsinki

KANSALLIS-Osake-Pankki, Finland's largest bank, was criticised strongly by the country's independent bank supervision board yesterday for presenting what were claimed to be over-optimistic and misleading figures over a series of complex share dealings.

The deals were carried out by Mr Pentti Kouri, the New York-based Finnish financier with authorisation from the bank.

Details of the secret transactions remain vague. However, they involve the acquisition of shares in several Finnish companies in which the bank already held stakes.

The supervision board claimed yesterday that the bank had incurred a loss of at least FM270m ($66m) as a result of Mr Kouri's activities and not the FM117m profit it claimed two and a half months ago.

Trading in the bank's shares was suspended briefly yesterday afternoon.

Mr Jorma Aranko, the head of the bank supervision board said that the bank's claim that it had made a FM117m profit on the share dealings "had come out of the blue".

He added that "even the bank's auditors agree with us about the FM270m loss".

A spokesman for the bank admitted yesterday that the FM117m profit was "over optimistic" and added that a full explanation of the matter would be provided in the bank's eight-month interim results, which are due out tomorrow.

The latest revelations at KOP may hasten the resignation of the bank's chairman, Mr Jaakko Lassila, some analysts in Helsinki said.

So far there has been no suggestion of illegalities at the bank but the whole affair over the flamboyant Mr Kouri and his share dealings has shaken Finland's financial world, which is already under stress with mounting credit losses and poor financial results.

Brent Walker close to deal on bonds refinancing

By Roland Rudd and Robert Peston in London

BRENT Walker, the troubled leisure group, is expected to announce today that it has at last reached agreement on the terms of its refinancing with Jefferson Smurfit, the Irish company which is the second biggest holder of Brent Walker's convertible bonds.

Without agreement on the financial reconstruction from bondholders, Brent Walker would have gone into receivership, owing its creditors £1.5bn ($2.61bn). But last night both Brent Walker and Smurfit confirmed that a deal had been struck, which will give the bondholders unsecured loan stock in exchange for their convertible bonds.

This deal represents an important concession by the big UK bank, Barclays, and others of Brent Walker's banks, which had been objecting to any deal giving the bondholders a debt instrument. However, the loan stock is an unusual hybrid instrument, with the features of both debt and equity, so Barclays has been placated.

Smurfit has won what it wanted, which is a security which ranks ahead of preference shares being issued to the banks and which will give it a voice if Brent Walker should

George Walker: family controls bonds worth £30m

need to be refinanced again. They would have the power, in future refinancing talks, to put Brent Walker into receivership.

On the other hand, if Brent Walker should go into insolvency, the new loan stock will rank behind the preference shares held by the banks – meeting Barclays' main concern.

Jefferson Smurfit owns £15m of the Brent Walker's bonds. It had been very reluctant to sign a deal, so Brent Walker has been holding bilateral negotiations with it. Now that Smurfit has signed up, Brent Walker will attempt to persuade other bondholders.

Mr Michael Smurfit, chairman of Jefferson Smurfit, owns a further £10m of the bonds in his name and has been conducting separate negotiations with Brent Walker.

Greatest resistance to the new deal is likely to come from Lonrho, the international trading group which owns £5m of them. Lonrho had made a tentative offer to acquire Brent Walker, as an alternative to the refinancing proposal.

Brent Walker sold £100m of the convertible bonds last year, as part of an interim arrangement to prop up the company. Buyers of the bonds became extremely bitter as the scale of Brent Walker's financial problems emerged over the past few months, making the bonds almost worthless.

Brent Walker is now hopeful it can sign a deal with the other bondholders. However, the refinancing will not be completed till several other parallel negotiations are completed.

The biggest bondholder is Mr George Walker and his family trusts which together control £30m worth of bonds.

Belgian supermarket chain rises 25% after tax refund

By Andrew Hill in Brussels

PROFITS at GIB Group, the Belgian supermarket chain with a strong US presence, rose by over 25 per cent to BFr1.77bn ($51m) after tax in the half-year from February to July, compared with BFr1.41bn in the first half of 1990-91.

However, GIB pointed out its figures had been boosted by a tax refund of BFr257m from the British authorities relating to the group's 25 per cent share in the Homebase do-it-yourself stores.

Excluding the refund, net consolidated profits rose only 7 per cent to BFr1.52bn, on turnover up 6 per cent from BFr99.4bn to BFr105bn.

The company said sales at its GB and Unic supermarkets had risen by 3.5 per cent and 3 per cent respectively, but sales from its Sarma hypermarket and Nopri supermarket chains slipped by 1 per cent.

The DIY division – which suffered in the early months of the year – started to recover in April, according to GIB, and managed to lift sales in the half-year by 7 per cent against the equivalent period, assuming constant exchange rates.

The US chains Handy Andy and Central Hardware showed particularly good growth, although Scotty's – a third US operation – was hit by the recession and its sales dropped 7 per cent.

Shareholders' equity at the end of July stood at BFr18.5bn compared with BFr16bn a year earlier.

Raytheon and Fiat in link-up

RAYTHEON, the US defence and electronic group, has linked with Fiat to exploit the emerging energy, petrochemical and waste management markets in Europe, the Soviet Union and the Middle East, Reuter reports.

The US company said that the groups would also co-operate in chemical weapons destruction and environmental markets.

Raytheon's United Engineers and Constructors subsidiary will join another Raytheon unit, Badger, in the ventures with Fiat. United Engineers and Constructors has an automated chemical weapons destruction facility on Johnston Island in the South Pacific.

Raytheon did not disclose other details of the agreements nor any potential contracts.

INTERNATIONAL COMPANIES AND FINANCE

Moody's may downgrade Hongkong Bank rating

By Angus Foster in Hong Kong

HONGKONG and Shanghai Banking Corporation and various subsidiaries have been placed under review for possible downgrading by Moody's Investors Service, the US credit rating agency.

The review threatens the bank's top quality short-term rating which was first assigned in 1987.

Moody's said it was concerned about the group's "continuing asset quality problems" and long-term profitability.

The agency also pointed to political uncertainty in Hong Kong in the run up to 1997, thereby calling into question the effectiveness of the bank's recent restructuring.

In April the bank set up a London-based holding company designed to distance the group from worries about Hong Kong's future.

Hongkong Bank said it was "surprised" by the announcement. "We don't see any justification for a downgrading," it said.

In August the bank announced a 21.6 per cent increase in interim profits to HK$1.86bn (US$241m) for the six months to the end of June. The figures, which were higher than expected, were seen as evidence that the bank's recent troubles were nearly over.

The review is in response to problems at Hongkong Bank's US and Australian subsidiaries, which were largely to blame for the bank's first decline in profits for more than 20 years in 1990.

Marine Midland Bank in the US was affected by non-performing loans due to a weak property market while Hongkong Bank of Australia was hit by bad debts, partly related to Mr Alan Bond.

Moody's has placed under review Hongkong Bank's P-1 rating for short-term deposits and commercial paper. The bank has no long-term debt. Also under review are the P-1 commercial paper ratings for Hongkong Bank of Canada and Concord Leasing.

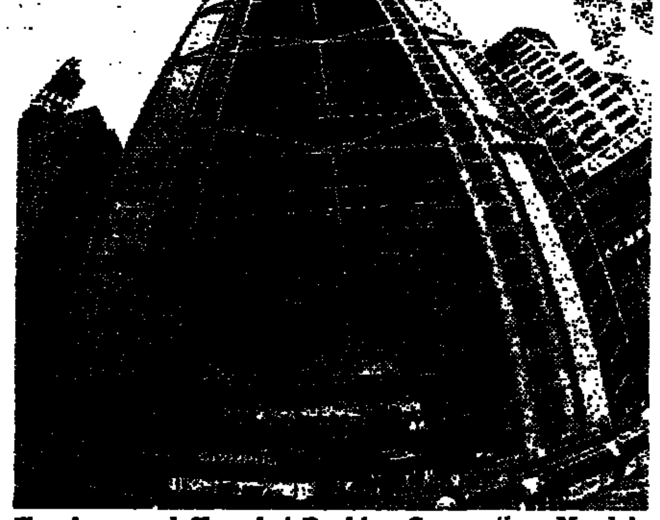
Marine Midland is also being reviewed and its rating for subordinated debt, standing at Baa2, faces the threat of falling out of the investment grade category.

Marine Midland's ratings were last reviewed and lowered, in March last year. The bank is trying to reduce costs and has cut nearly a third of its staff since the beginning of last year.

Moody's decision raises questions about Hong Kong companies' ability to distance themselves from the colony's mounting political uncertainty in the run up to 1997. Hongkong Bank is the most important company to establish a foreign holding company, but about 70 other companies have moved domicile to places such as Bermuda and the Cayman Islands.

Last December Mr William Purves, Hongkong Bank's chairman, pointed to worries about credit ratings before 1997 as one reason for the bank's restructuring under a London holding company.

In its statement yesterday, the US credit rating agency said it would be investigating whether Hongkong Bank could achieve a "sustained recovery in profits, given a volatile home economy and the political changes that will be taking place in Hong Kong in the coming years".



Hongkong and Shanghai Banking Corporation: Moody's review threatens the bank's top quality short-term rating

Cheung Kong takes option to buy 11% of HK group

By Angus Foster

MR Li Ka-shing's Cheung Kong Holdings has continued its string of strategic acquisitions and taken an option to buy up to 11 per cent of Hong Kong-listed Guoco, a financial services group which includes Dao Heng Bank, the colony's fourth largest bank group.

Cheung Kong has subscribed to a HK$268m note which can be converted into Guoco shares within three years at HK$2.10, a slight discount to last week's closing price.

Dao Heng has been targeted by several brokerage houses as a fast growing bank and last month announced a 54 per cent increase in net profits to HK$232m ($30m) in the year to the end of June.

In recent months Cheung Kong has taken minority stakes in companies ranging from Evergo, a property company controlled by the Lau brothers, to Wo Kee Hong, a consumer electronics distributor.

Fletcher raises NZ$110m in asset sale

By Terry Hall in Wellington

FLETCHER Challenge, New Zealand's biggest industrial group, which is under pressure to reduce its debt, has raised NZ$110m ($62.3m) from the sale of its Taranaki ammonia urea plant and 65 commercial properties.

The sales are the first of a planned NZ$1bn worth of assets, earmarked for disposal this financial year.

The ammonia urea plant, which produces 160,000 tonnes a year of agricultural products from natural gas, has been sold to BOP Fertiliser, which is 40 per cent-owned by Fernz, one of the largest fertiliser groups in Australasia.

However, settlement for NZ$45.5m will not take place until next June. Fletcher is to retain what is expected to be a NZ$10m profit for the year.

Fletcher announced in March it was selling the plant to concentrate its downstream gas activities on methanol production, where it is now the world's leading producer with plants in New Zealand and Chile.

Many of the commercial properties sold within New Zealand have gone to Indonesian, Singaporean and Hong Kong buyers after marketing efforts there.

A further 10 properties worth NZ$12.4m are under contract through a scheme for Asian buyers who are offered 80 per cent vendor finance at a fixed 10 per cent interest rate for five years.

Northern Telecom plans growth in French and German markets

By Hugo Dixon in Geneva

NORTHERN TELECOM, the Canadian telecommunications manufacturer, may open factories and research and development centres in continental Europe and Mexico as part of its global ambitions.

Mr Paul Stern, Northern's chairman, said that following the acquisition of STC, the UK telecommunications manufacturer, last year, the group was looking to expand in France and Germany.

Obtaining access to these markets would probably involve partnerships such as joint ventures, acquisitions or licensing agreements.

STC was pursuing a similar strategy of trying to link with medium-sized European manufacturers, such as Bosch of Germany, SAT of France and Philips of Holland before it was taken over.

Mr Stern said that "the strategy of hooking up is more likely to succeed" since the takeover because Northern had more to offer.

He added the group was interested in collaborating with larger European companies, such as France's Alcatel, Germany's Siemens and Sweden's Ericsson, as well as Japanese groups, such as Oki and Fujitsu. That co-operation, he said, would enable them to avoid duplication in developing new technologies.

Mr Stern maintained that Northern could offer partners access to the North American market and to certain technologies such as submarine fibre optic cables.

In exchange, it would want access to foreign markets.

He added that Northern might team up with other suppliers to build manufacturing facilities.

"We could say 'Let's build a factory in Latin America together'," he said.

Southwest alters offer to Midway

By Karen Zagor

SOUTHWEST Airlines, the Dallas-based regional carrier regarded as one of the few bright lights in the US aviation industry, yesterday amended its offer to Midway Airlines, the bankrupt Chicago carrier.

Under the terms of the revised offer, Southwest would pay the carrier $28m for its gates and related assets at Midway airport, Chicago's second biggest airport.

If Midway continues as an independent airline, Southwest would give Midway the chance to re-acquire or sub-lease most of those gates at Southwest's cost. The alternative offer also involves a joint marketing agreement for the two carriers.

If Midway does not survive, Southwest wants negotiations to acquire or help with the disposal of Midway's other assets.

Last week, Southwest offered to pay $10m for 10 gates at Midway airport and to lend the struggling carrier $20m, to be repaid over five years and secured by other assets at Midway Airport. Some of the gates would be sub-leased back to Midway.

Southwest said yesterday that its revenue passenger miles in September rose 19.6 per cent to 919m revenue passenger miles. For the third quarter, revenue passenger miles grew 14 per cent to 3.06bn.

Amgen wins drug patent battle

By Karen Zagor in New York

THE FOUR-YEAR patent dispute between Amgen and Genetics Institute, two US biotechnology companies, over erythropoietin (EPO) was finally resolved yesterday when the US Supreme Court denied a request by Genetics Institute to overturn a lower court decision in favour of Amgen.

Amgen will now have an exclusive EPO patent in the US.

Mr Viren Mehta, an analyst at Mehta & Isaly in New York, said that the Supreme Court's action had been widely expected.

EPO is a drug that stimulates red blood cell production and is used to treat severe anaemia.

At mid-session, Amgen's stock was $1¾ higher at $54½, in what analysts described as a technical adjustment, while Genetics Institute declined $1¼ to $38½.

Amgen first cloned the gene for EPO in 1983.

A year later, scientists at Genetics Institute duplicated the feat.

In June 1989, the Food and Drug Administration (FDA) granted Amgen manufacturing and marketing rights for a version of EPO which is sold as Epogen, used to treat anaemia in patients with chronic kidney failure.

In March, a federal court upheld Amgen's patent in the US and ruled that a similar drug developed by Genetics Institute infringed Amgen's patent.

Kemper Securities turns the corner

Barbara Durr discovers prospects for profits in new a structure

WHILE Kemper the diversified Chicago financial services group, faces asset quality difficulties in its insurance business's portfolio, Kemper Securities Group, long the company's poor sister, appears to have taken on a Cinderella-like charm.

Kemper Securities Group, which after a reorganisation has become the twelfth largest US brokerage, reported a $3.4m profit for the first half, marking the first return to profit since 1989 and the best year since 1987.

At the start of 1990, Kemper decided to consolidate the five far-flung securities brokerage operations it acquired during the 1980s. These included Bateman, Eichler, Hill Richards in Los Angeles, Blunt, Ellis & Loewi in Milwaukee, Boettcher & Co in Denver, Lovett Underwood Neuhaus & Webb in Houston and Prescott Ball & Turben in Cleveland.

They had been putting in disappointing performances since 1987 and, in common with the entire financial services industry in the post-1980s era, were ripe for shrinkage.

After groping for a formula for its broker-dealer business for several years, analysts say Kemper finally appears to have hit on the correct one. Mr David Seifer of Donaldson, Lufkin & Jenrette said: "Now they're doing it right."

A Merrill Lynch analyst points out that not only does the firm's new structure provide better risk control and capital allocation, but the company has made its move in a good market environment. The securities group chairman, Mr James Boris, says that cutting costs by about $75m a year, a 25 per cent reduction, has placed the firm in a position to be profitable. The cost cuts which involved heavy initial charges, included a 22 per cent reduction in workforce.

Merrill Lynch says Kemper Securities' new structure means better risk control and capital allocation in a good market environment, following a 25% reduction in costs, including staff cuts.

Mr Boris is determined that the firm emphasise its regional flavour and its focus on retail distribution. He says the market for securities brokering in the 1990s will be relationship oriented, with more customised services for individuals.

This, he says, is in good measure the product of American demographics, which are shifting the client base for securities brokering toward an older population. Americans over the age of 50 account for about $7,000bn in assets.

The number is expected to grow significantly as the baby boom generation ages. Mr Boris says this means that customers will want more control of assets and will shun risk. In such a market, financial service "takes a lot of hand holding", he says, which he believes is Kemper's strong point.

Mr Boris sees Kemper having a competitive advantage through its regional approach and emphasis on customer relations. "Our people work in a different way. They live there, work there, go to church there and know the local corporate entities well."

He is implementing another shift in Kemper's brokering business. Instead of churning out new financial products, it will concentrate on a stable list of choices and tailor the mix to customer needs.

While Kemper runs a large mutual fund operation, which is included in the $69bn in assets under management by its subsidiary Kemper Financial Services, mutual funds make up just 10 per cent of the securities group's revenues. It distributes equities, taxable and tax free bonds, annuities, unit investment trusts, money market instruments, options and futures. It has begun a service for professionally managed accounts.

While all this may seem a sound approach to a tight-fisted retail market, Kemper Securities' difficulty is low margins in retail distribution.

Consequently, the firm is looking for more velocity in trading, while having to adopt a more conservative trading approach. "We can't afford to make mistakes," says Mr Boris. The firm has got out of risk and conversion arbitrage businesses and has given up trying to outgun Wall Street, concentrating instead on servicing its distribution network.

Mr Seifer says what the firm wants to do and what it can do, may not match. "Execution is what they need a lot of. If they can do that, it'll work."

Boeing to trim workforce over arms cuts

BOEING, the aircraft manufacturer, said it expected to lay off or reassign at least 2,500 employees because of President Bush's US nuclear arsenal cuts, which include plans to cancel four programmes on which Boeing was working, Reuter reports from Seattle.

Mr Pete Dakan, a Boeing Defence & Space Group spokesman, said that the programme of cuts would affect less than 5 per cent of the division's projected sales, however, and were not expected to be a significant setback in the unit's attempt to return to profitability in 1992.

Mr Jerry King, executive vice-president of Boeing Defence & Space Group, said that Boeing would try to reassign as many of the displaced workers as possible within the company.

Last year, the Boeing Defence & Space Group accounted for 20 per cent of Boeing's $28bn in revenues.

Singapore to reform insurance regulations

SINGAPORE is to raise solvency margins of insurance companies and introduce new investment regulations which will be effective from December 31 next year to protect the interests of policyholders, Mr Richard Hu, Finance Minister, said yesterday, Reuter reports from Singapore.

Mr Hu told a conference on international reinsurance: "MAS [Monetary Authority of Singapore] has . . . reviewed the need to further enhance the financial soundness of the Singapore insurance industry so as to better protect policyholders' interests."

Singapore has 31 professional reinsurers, compared with just one in 1973, Mr Hu said.

The reforms include raising the minimum company solvency margin for general insurers and reinsurers to S$5m from the current S$1m, Mr Hu said.

Minimum solvency margins for the Singapore insurance fund of a general insurer will be raised to S$5m, 50 per cent of net premiums or 50 per cent of loss reserves, whichever is the highest.

The present requirement is the highest of S$1m, 50 per cent of net premiums or 50 per cent of loss reserves.

For the offshore insurance fund, general insurers will be required to maintain a minimum solvency margin equal to the highest of S$1m, 20 per cent of net premiums or 20 per cent of loss reserves, Mr Hu said.

Insurance companies will also be required to observe maximum limits for investments in equities, real estate, unsecured loans and foreign assets, he said. The new measures will also restrict investments in related companies and require general insurers to maintain a minimum level of liquidity in their fund assets, he said.

NGC posts NZ$18m profit

NATURAL Gas Corporation (NGC), New Zealand's leading supplier of natural gas, has reported a NZ$18.72m (US10.6$m) after-tax profit for its first operating period, the four months to June 30, writes Terry Hall in Wellington.

NGC was previously owned by the Fletcher Challenge subsidiary Petrocorp and was set up as a separate company in February. Fletcher plans to sell a third of the company this year.

The profit was achieved on sales of NZ$85.18m and includes a NZ$20.91m contribution in dividends from the company's NZ$353m in redeemable preference shares in Fletcher Challenge Gas Investments, which owns 20 per cent of the Maui Gasfield. During the period the company raised its own debt of NZ$250m, which was used to repay advances to Fletcher Challenge.

Mr Richard Bentley, chief executive, said the company was preparing for deregulation of the gas market later this year. This was not expected to affect its performance.

FT GUIDE TO WORLD CURRENCIES

The table below gives the latest available rates of exchange (rounded) against four key currencies on Monday, October 7, 1991. In some cases the rate is nominal. Market rates are the average of buying and selling rates except where they are shown to be otherwise. In some cases market rates have been calculated from those of foreign currencies to which they are tied.

COUNTRY		£ STG	US $	D-MARK	YEN (X 100)
Afghanistan	(Afghani)	99.25	57.1881	34 048	44 2093
Albania	(Lek)	10.01	5.7677	3.4339	4 4587
Algeria	(Dinar)	36.64	21 112	12.5694	16.3207
Andorra	(Fr Fr)	9.9225	5 7173	3.4039	4.4198
	(Sp Peseta)	184 00	106.021	63 1217	81 9599
Angola	(Kwanza)	103.411	59 5857	35.4754	46 0628
Antigua	(E Carr $)	4.69	2.7023	1 6089	2.089
Argentina	(Austral)	17195.08	9907.85	5898.83	7659.28
Aruba	(Florin)	3.11	1 7919	1.0668	1 3853
Australia	(Aus $)	2.1820	1.2572	0 7485	0.9719
Austria	(Schilling)	20.495	11.8092	7.0308	9.1291
Azores	(Port Escudo)	250.50	144.339	85.9348	111.581
[illegible]					
Ethiopia	(Ethiopian Birr)	3.5652	2.0542	1.223	1.588
Falkland Is	(Falk £)	1.00	0.5762	0.343	0.4454
Faroe Is	(Danish Kroner)	11.2425	6.4779	3.8567	5.0077
Fiji Is	(Fiji $)	2.5485	1.4684	0.8742	1.1351
Finland	(Markka)	7.0993	4.0906	2.4354	3 1622
France	(Fr)	9.9225	5.7173	3 4039	4 4198
Fr. Cty/Africa	(CFA Fr)	496.125	285.869	170.197	220.991
Fr Guiana	(Local Fr)	9.9225	5.7173	3 4039	4.4198
Fr. Pacific Is	(CFP Fr)	179.40	103.371	61 5437	79 9109
Gabon	(CFA Fr)	496.125	285.869	170.197	220.991
Gambia	(Dalasi)	16.35	9.4209	5.6089	7.2828
Germany	(D-Mark)	2.9150	1.6796	1	1.2984

COUNTRY		£ STG	US $	D-MARK	YEN (X 100)
Ghana	(Cedi)	651.37	375.321	223.455	290.143
Gibraltar	(Gib £)	1 00	0.5762	0.343	0.4454
Greece	(Drachma)	324.92	187.22	111.465	144.731
Greenland	(Danish Krone)	11.2425	6 4779	3 8567	5.0077
Grenada	(E Carr $)	4 69	2.7023	1.6089	2.089
Guadaloupe	(Local Fr)	9 9225	5 7173	3 4039	4.4198
Guam	(US $)	1.7355	1	0.5953	0.773
Guatemala	(Quetzal)	8 6989	5 0123	2 9841	3.8747
Guinea	(Fr)	1077.25a	620.714	369 554	479.844
		521.25n	300.346	178.816	232.183
Guinea-Bissau	(Peso)	1129.37	650.746	387.434	503.06
Guyana	(Guyanese $)	220 66	127 145	75.6981	98 2895
[illegible]					
Mozambique	(Metical)	3071.97	1770.08	1053.85	1368 36
Namibia	(S A Rand)	4.8913	2.8183	1.6779	2.1787
Nauru Is	(Australian $)	2 1820	1.2572	0 7485	0.9719
Nepal	(Nepalese Rupee)	74.365	42 8493	25.5111	33.1247
Netherlands	(Guilder)	3.2825	1.8913	1.126	1 4621
N'nd Antilles	(A/Guilder)	3.11	1.7919	1.0668	1 3853
New Zealand	(NZ $)	3 0538	1.7596	1.0476	1 3602
Nicaragua	(Gold Cordoba)	8 69	5.0072	2.9811	3.8708
Niger Rep	(CFA Fr)	496.125	285.869	170.197	220.991
Nigeria	(Naira)	18.68	10.7634	6.4082	8.3207
Norway	(Nor. Krone)	11.4075	6.573	3.9133	5.0812
Oman	(Rial Omani)	0.6713	0.3868	0.2302	0.299

COUNTRY		£ STG	US $	D-MARK	YEN (X 100)
Pakistan	(Pak. Rupee)	42.54	24.5116	14.5934	18.9487
Panama	(Balboa)	1.7355	1	0.5953	0 773
Papua New Guinea	(Kina)	1.6388	0 9442	0.5621	0.7299
Paraguay	(Guarani)	2284.86	1316.54	783 828	1017.76
Peru	(New Sol)	1.4725	0 8484	0.5051	0.6559
Philippines	(Peso)	45.5831	26.2651	15.6374	20 3042
Pitcairn Is	(£ Sterling)	1.00	0 5762	0.343	0.4454
	(NZ $)	3.0538	1.7596	1.0476	1 3602
Poland	(Zloty)	19302.00	11121.9	6621.61	8597.77
Portugal	(Escudo)	250.50	144.339	85 9348	111.581
Puerto Rico	(US $)	1.7355	1	0.5953	0.773
Qatar	(Riyal)	6.3245	3.6441	2.1696	2.8171
[illegible]					
Vanuatu	(Vatu)	192.86	111.126	66.1612	85.9064
Vatican	(Lira)	2178.00	1254.97	747.17	970.156
Venezuela	(Bolivar)	95.1329	54.8158	32.6356	42.3754
Vietnam	(Dong)	18730.25	10792.4	6425.47	8343.1
Virgin Is-British	(US $)	1.7355	1	0.5953	0.773
Virgin Is-US	(US $)	1.7355	1	0 5953	0.773
Western Samoa	(Tala)	4.1488	2.3905	1 4232	1 848
Yemen (Rep of)	(Rial)	21 0237	12.1139	7.2122	9.3646
Yemen (Rep of)	(Dinar)	0.8010	0 4615	0.2747	0.3567
Yugoslavia	(Dinar)	37.8903	21.8324	12.9983	16 8776
Zaire Rep	(Zaire)	31592.0	18203.4	10837.7	14072.2
Zambia	(Kwacha)	128.05	73.7827	43 9279	57.0378
Zimbabwe	($)	8.70	5 0129	2.9845	3.8752

Special Drawing Rights October 4, 1991 United Kingdom £0.783539 United States $1.37276 Germany D Mark 2.28400 Japan Yen178.459
European Currency Unit Rates October 7, 1991 United Kingdom £0.702414 United States $1.21904 Germany D Mark 2.04860 Japan Yen157.829

Abbreviations: (a) Free rate; (b) Banknote rate; (c) Commercial rate; (d) Controlled rate; (e) Essential imports; (g) Financial rate; (h) Exports; (i) Non commercial rate; (j) Business rate; (k) Buying rate; (l) Luxury goods; (m) Market rate; (n) Public transaction rate; (o) Official rate; (p) preferential rate; (q) convertible rate; (r) parallel rate; (s) Selling rate; (t) Tourist rate (u) Currencies fixed against the US Dollar.
Some data supplied by Bank of America, Economics Department, London Trading Centre. Enquiries: 071 634 4360/5.
Monday, October 7, 1991

LEGAL NOTICES

DOCTUS TECHNOLOGY SERVICES LIMITED
(IN ADMINISTRATIVE RECEIVERSHIP)

NOTICE IS HEREBY GIVEN, pursuant to Section 48(2) of the Insolvency Act 1986, that a meeting of the unsecured creditors of the above named company will be held at:- CORK GULLY, SHELLEY HOUSE, 3 NOBLE STREET, LONDON EC2V 7DQ

on 21 October 1991 at 10.30 a.m. for the purpose of having laid before it a copy of the report prepared by the Joint Administrative Receivers under section 48 of the said Act. The meeting may, if it thinks fit, establish a committee to exercise the functions conferred on creditors' committees by or under the Act.

Creditors whose claims are wholly secured are not entitled to attend or be represented at the meeting. Other creditors are only entitled to vote if:

(a) they have delivered to me at the address shown above, by no later than 4.00 p.m on 18 October 1991, written details of the debts they claim to be due to them from the company and the claim has been duly admitted under the provisions of Rule 3.11 of the Insolvency Rules 1986; and

(b) there has been lodged with me any proxy which the creditor intends to be used on his or her behalf.

Please note that the original proxy signed by or on behalf of the creditor must be lodged at the address mentioned; photocopies (including faxed copies) are not acceptable.

Date: 3 October 1991

C J BARLOW
Joint Administrative Receiver
Doctus Technology Services Limited

NOTICE OF CREDITORS' MEETING CONTINGENCY PLANNING LIMITED IN RECEIVERSHIP

NOTICE IS HEREBY GIVEN, pursuant to Section 48 of the Insolvency Act 1986, that a MEETING of the CREDITORS of the above named company will be held at 43 Temple Row, Birmingham on 18 October 1991 at 11.30 am for the purposes of having laid before it the report prepared by the Administrative Receiver in accordance with the said section and, if thought fit, appointing a Committee.

Creditors whose claims are wholly secured are not entitled to attend or vote at the meeting. Creditors who are partly secured may only vote in respect of the balance of the amount due to them after deducting the value of the security, as estimated by them. A creditor in respect of a debt due on, or secured by, a bill of exchange or promissory note must treat the liability of any person who is liable on the bill antecedently to the company as a security held by him (unless that other person is subject to a bankruptcy order or in liquidation).

Creditors wishing to vote at the meeting must lodge a written statement of their claims with me at Cork Gully, 43 Temple Row, Birmingham B3 2JT no later than 12 noon on 17 October 1991.

DATED this 4 day of October 1991

John F Powell
Administrative Receiver

NOTICE TO CREDITORS OF BANCA NOVARA (UK) LIMITED
COMPANY NUMBER: 1136240

Following a reorganisation, the assets, business and undertaking of Banca Novara (UK) Limited were transferred on 30 September 1991 to the London Branch of Banca Popolare di Novara S.c.r.l., the Italian parent company of Banca Novara (UK) Limited. Consequently, this company has ceased trading and its activities will in future be performed by the London Branch of Banca Popolare di Novara S.c.r.l. As an integral part of the reorganisation the above named company was put into solvent liquidation by the members of the company on 1 October 1991. As such, all creditors with valid claims either have been, or will be, paid in full.

The notices that follow below are purely formal giving creditors notice of the liquidator's appointment and the steps creditors should take to register any claim they may have against the above named company.

On 1 October 1991 the company was placed in members' voluntary liquidation and Mr Colin Graham Bird and Mr Richard Victor Yerburgh Setchim of Price Waterhouse, No 1 London Bridge, London SE1 9QL were appointed liquidators by the members.

The liquidators give notice (pursuant to Rule 4.182A of the Insolvency Rules 1986) that the creditors of the company must send details, in writing of their debts or claims against the company, to the liquidators at the above address by 1 November 1991 which is the last day for proving claims. The liquidators also give notice that they will then make a final distribution to creditors and that a creditor who does not make a claim by the date mentioned will not be included in the distribution.

All known creditors have been or will be paid in full.

1 October 1991
RVY Setchim
Joint Liquidator

IN THE MATTER OF WILLIAM JACKSON & CO. LIMITED AND IN THE MATTER OF THE INSOLVENCY ACT 1986

In accordance with Rule 4.106 of The Insolvency Rules 1986 notice is hereby given that I, Peter S Dunn FCA, a Licensed Insolvency Practitioner of Latham Crossley & Davis, 45 Conduit Street, London W1R 9FB, was appointed Liquidator of the above Company by the Creditors on 2nd October 1991.
Dated this 2nd October 1991
Peter S Dunn FCA, Liquidator
Latham Crossley & Davis
45 Conduit Street, London W1R 9FB

PAN-HOLDING
SOCIETE ANONYME
LUXEMBOURG

The half-yearly report of the Company, is available at the "Societe de la Bourse de Luxembourg" and the "Societe des Bourses Francaises".

As of June 30, 1991, the consolidated net assets were as follows:

- net cash assets (of which 1.5% gold bullion)	12.1%
- investment portfolio and long-term investments	87.9%
(items exceeding 5%)	
United States of America	: 20.6%
Japan	: 13.1%
France	: 11.5%
Great-Britain	: 7.8%
Germany	: 5.7%

The unconsolidated net asset value as of September 28, 1991 amounted to USD 289,151,870.76, that is USD 525.73 per share of USD 200 par value, increasing by 7.1% since December 31, 1990, dividend excluded.

The consolidated net asset value amounted to USD 538.05 per share at the same date.

BankAmerica Corporation
(Incorporated in the State of Delaware)

U.S.$400,000,000
Floating Rate Subordinated Capital Notes Due 1997

Holders of Notes of the above issue are hereby notified that for the next Interest Sub-period from 9th October, 1991 to 12th November, 1991 the following will apply:

1. Interest Payment Date: 9th December, 1991.
2. Rate of Interest for Sub-period: 5½% per annum.
3. Interest Amount payable for Sub-period: US$259.72 per US$50,000 nominal.
4. Accumulated Interest Amount payable: US$499.30 per US$50,000 nominal.
5. Next Interest Sub-period will be from 12th November, 1991 to 9th December, 1991.

Agent Bank
Bank of America International Limited

U.S. $100,000,000
Security Pacific Corporation
Subordinated Floating Rate Notes due 1992

Notice is hereby given that for the Interest Period from October 8, 1991 to January 8, 1992 the Notes will carry an Interest Rate of 5¾% per annum. The coupon amount payable on January 8, 1992 will be U.S. $1,469.44 and U.S. $146.94 respectively for Notes in denominations of U.S. $100,000 and U.S. $10,000.

By: The Chase Manhattan Bank, N.A. London, Agent Bank
October 8, 1991

INTERNATIONAL CAPITAL MARKETS

Treasuries slip as traders expect cut in interest rates

By **Patrick Harverson** in New York and **Sara Webb** in London

US TREASURY prices weakened slightly across the board yesterday morning as the market expected a cut in interest rates from the Federal Reserve.

By midday the benchmark 30-year government issue was down [illegible] at 103[illegible], yielding 7.780 per cent.

The two-year note was also slightly easier, down [illegible] at 100[illegible], to carry a yield of 5.886 per cent.

After last Friday's poor employment figures, analysts and traders were confident yesterday that the Fed was on the verge of easing monetary conditions.

However, the market may have to wait for an interest-rate cut until this Friday, when retail sales and producer prices data for September are released. Retail sales are forecast to have risen 0.4 per cent last month and producer prices 0.2 per cent.

Before the end of the week, however, traders and investors have to negotiate Wednesday's big auction of seven-year notes, which could depress prices in the short-term.

GOVERNMENT BONDS

■ THE Japanese government bond market slipped on profit-taking and worries that the big four securities houses could suffer further penalties for violating securities market rules.

Traders noted some liquidating of long positions on worries that the four leading securities firms – Nomura, Daiwa, Nikko and Yamaichi – may be banned from trading in the financial markets for a few days as punishment for their involvement in a series of market scandals.

Also, dealers said that the market would be focusing on the weekend meeting in Bangkok of finance ministers and central bankers from the Group of Seven industrialised countries.

The yield on the No 129 benchmark bond opened at 5.85 per cent and closed at 5.895 per cent, while the December futures contract fell from 100.05 to close at 99.9 in Tokyo.

■ UK GILTS prices rose after the US Treasury bond market showed strength on Friday and helped by some Japanese buying.

Long-dated gilts gained nearly half a point, with the benchmark 11¾ per cent gilt due 2003/07 rising from 114½ to 114[illegible], while short-dated gilts remained firm.

Traders said the market was taking its cue from the US in the absence of significant UK economic data.

The Bank of England supplied its 2½ per cent stock due 2013 yesterday, with traders estimating that about half the £100m tranche was sold.

■ GERMAN government bonds opened strongly, helped by demand from investors underweight in bunds.

The London International Financial Futures Exchange bund futures contract opened at 86.30 from Friday's close of 86.15 and rose to 86.38 before falling to 86.23.

The Bundesbank is expected to announce details of a Federal bond issue today. Traders are expecting about DM8bn to be issued with a coupon of 8¼ per cent.

BENCHMARK GOVERNMENT BONDS

		Coupon	Red Date	Price	Change	Yield	Week ago	Month ago
AUSTRALIA		12.000	11/01	111.8366	+0.537	10.10	10.31	10.70
BELGIUM		9.000	08/01	99.5000	+0.150	9.07	9.12	9.20
CANADA *		9.750	12/01	105.2250	+0.300	8.95	9.18	9.65
DENMARK		9.000	11/00	100.0900	+0.315	8.98	9.05	9.20
FRANCE	BTAN	8.500	11/96	97.7753	-0.037	9.05	9.02	9.07
	OAT	9.500	01/01	104.0200	+0.180	8.83	8.83	8.90
GERMANY		8.750	08/01	103.2400	+0.590	8.25	8.40	8.48
ITALY		12.500	03/01	99.8300	+0.040	12.82	12.93	13.28
JAPAN	No 119	4.800	06/99	92.5783	-0.071	6.22	6.33	6.58
	No 129	6.400	03/00	102.8785	-0.117	5.89	5.98	6.25
NETHERLANDS		8.500	03/01	98.7700	+0.080	8.68	8.78	8.75
SPAIN		11.900	07/96	101.1000	-	11.64	11.41	11.52
UK GILTS		10.000	11/96	101-15	+02/32	9.62	9.68	9.76
		10.000	02/01	102-18	+06/32	9.58	9.60	9.75
		9.000	10/08	96-26	+10/32	9.38	9.38	9.56
US TREASURY *		7.875	08/01	103-12	+08/32	7.38	7.48	7.79
		8.125	08/21	103-29	-	7.78	7.83	8.04

London closing, *New York morning session
Prices: US, UK in 32nds, others in decimal
Yields: Local market standard
Technical Data/ATLAS Price Sources

Paribas to handle Polish bank sale

By **Christopher Bobinski** in Warsaw

BANQUE Paribas is to handle the sale of Bank Slaski (BS) under the Polish government's bank privatisation programme.

BS, based in Katowice, is the largest of the nine state-owned banks created from the central bank two years ago and lends to Poland's heavy industry.

Schroders, the UK merchant bank, is leading another consortium privatising the Wielkopolski Bank Kredytowy (WPK), while the Rothschild group is handling the sale of Export Development Bank (BRE).

Mr Wojciech Misiag, a deputy finance minister, has estimated that the WPK and the BS were worth between Zl 1,000bn ($91m) and Zl 1,500bn each. The Poles are looking to western banks to take about 20 per cent of the equity in the BS and the WPK, while some 40 per cent to 50 per cent is to be offered to domestic institutional and private investors. The remaining shares will stay in state hands.

However, the sale of the BRE has been delayed as a Polish government policy decision to keep most of the equity under domestic control has narrowed the field of potential western buyers.

Paribas hopes to complete the privatisation of the BS by the spring. The French bank is being supported by law firm Jeantot Associés, while Crédit du Nord will act as accountant.

Batax, a Polish-Dutch joint venture, will act as a consultant. The BS employs 3,500 people in 42 bank branches. It has net assets worth Zl 2,050bn.

FT/AIBD INTERNATIONAL BOND SERVICE

Listed are the latest international bonds for which there is an adequate secondary market.
Latest prices at 8:05 pm on October 7

U.S. DOLLAR STRAIGHTS	Issued	Bid	Offer	Chg. day	Yield
ABBEY NATIONAL 8 7/8 93	150	102¾	103¼	-¼	6.74
ALBERTA PROVINCE 9 3/8 95	600	107¼	107⅝	+¼	7.24
AUSTRIA 8 1/2 00	400	102⅞	103¼	-¼	8.00
BANK OF TOKYO 8 3/8 96	100	102½	103	+½	7.67
BELGIUM 9 5/8 98	250	109¼	109½	+¼	7.82
BFCE 7 3/4 97	150	101⅝	101⅞	+¼	7.42
[illegible]					
NORWAY 5 1/8 95	50000	97⅛	97½	-⅛	6.01
SNCF 6 3/4 00	30000	104⅞	105¼	-⅛	5.99
SWEDEN 5 5/8 95	20000	98¾	99¼		5.99
WORLD BANK 6 3/4 00	50000	105¼	105½	-⅛	5.93

OTHER STRAIGHTS	Issued	Bid	Offer	Chg. day	Yield
BAYERISCHE VEREINS INT 7 94 LFr	600	94	95		9.53
KREDIETCORP 7 93 LFr	1000	95⅛	96⅛		9.69
WORLD BANK 8 96 LFr	1000	95¾	97½		9.16
UNILEVER 9 00 Fl	500	103¼	103½	+⅛	8.47
BCE INC 9 5/8 93 C$	300	101⅛	101⅝	+⅛	8.75
BELL CANADA 10 5/8 99 C$	150	[illegible]	[illegible]	[illegible]	9.64
[illegible]					

CONVERTIBLE BONDS	Issued	Conv. price	Bid	Offer	Prem
[illegible]					
TEXAS INSTRUMENTS 2 3/4 02	75	3.749	[illegible]	[illegible]	[illegible]
THORN EMI 5 3/4 04 £	300	8??	86½	87½	
[illegible]	103	7.45	116¾	117¾	+10.10

* No information available - previous day's price
‡ Only one market maker supplied a price

STRAIGHT BONDS: The yield is the yield to redemption of the bid-price; the amount issued is in millions of currency units. Chg. day=Change on day.
FLOATING RATE NOTES: Denominated in dollars unless otherwise indicated. Coupon shown is minimum. Spread=Margin above six-month offered rate (three-month §above mean rate) for US dollars. C.cpn=The current coupon.
CONVERTIBLE BONDS: Denominated in dollars unless otherwise indicated. Cnv. price=Nominal amount of bond per share expressed in currency of share at conversion rate fixed at issue. Prem=Percentage premium of the current effective price of acquiring shares via the bond over the most recent price of the shares.

INTERNATIONAL CAPITAL MARKETS

First Eurobond backed by Mexican mortgages issued

THE FIRST Eurobond offering backed by Mexican mortgage assets was launched on Friday, underlining the re-integration of Mexico into the international financial markets, writes Simon London.

The issue was made by First Mexican Acceptance Corporation, a special vehicle set up by Sidek, a large Mexican public company with interests from steel to tourism.

The $50m bond issue is backed by about 250 mortgages, mostly from hotel and villa developments at Puerta Vallarta, a Pacific coast marina development. Other securitisations by Mexican companies have been backed by assets originating in the US, such as credit card receivables.

Of the $50m issue, $10m is subordinated and will absorb any initial losses in case of default on the underlying mortgages.

The bonds also have a guarantee from Nafinsa, the state-owned financing agency.

The bonds have a final maturity date of 1996, but an average life of 3.1 years. The senior bonds carry a coupon of 8¾ per cent and were re-offered to investors at a fixed price of 96.625.

At this level on Friday the yield was 215 basis points more than US Treasury bonds of similar maturity, but this had widened to 230 basis points yesterday, following a strong rally in the US government bond market.

Five-year bonds, issued directly by Nafinsa, yield about 15 basis points more in the secondary market, but the asset-backed bonds may be redeemed early as the mortgages are paid down.

The deal was arranged by Morgan Grenfell and lead-managed by Deutsche Bank Capital Markets. It was being placed with institutional investors yesterday and is unlikely to trade widely.

3i brings generously priced deal

By Simon London

VENTURE capital group 3i, owned by the UK clearing banks, yesterday launched its first international bond since plans for a stock market flotation next year were revealed.

The deal, lead managed by Warburg Securities, pays a coupon of 10¾ per cent and was re-offered to investors at a fixed price of 99.66. At this level the yield spread over UK gilts is 95 basis points.

Participants said the pricing was generous given the credit quality of the issuer. 3i has an AA- credit rating from Standard & Poor's and an A1 from Moody's Investors Service.

For 3i, a long-term equity investor, long-dated bond issues are the most attractive form of matched funding. The issue was swapped into floating rate sterling by Barclay's de Zoete Wedd, the joint lead manager, giving 3i 10-year floating-rate funding at about 50 basis points above the London interbank offered rate.

British Gas raised $130m from an unusual issue of 30-year zero-coupon bonds, lead-managed by Goldman Sachs. The bonds have a nominal value of $1.5bn but were re-offered to investors at a fixed price of just 8.77, giving a yield spread over US Treasury bonds is 50 basis points.

INTERNATIONAL BONDS

Investors buy zero-coupon bonds for highly-geared exposure to the market. In this case, for every $8.77 of cash outlay, an investor gains $100 exposure to the Eurodollar market. Goldman Sachs, which underwrote the whole issue, said buyers were both retail and institutional.

However, few borrowers are prepared to take on such a large repayment. An initial $130m liability will be shown on the British Gas balance sheet, rising to $1.5bn as the issue nears redemption.

Province of Quebec launched a Y50bn 10-year issue, lead managed by IBJ International. The bonds carry a coupon of 6¼ per cent and were priced at 99.95, for a yield of 6.26 per cent, a pick-up of about 25-30 basis points over top supranational borrowers.

Participants reckoned the pricing was tight but the bonds would sell over time. Appetite for Euroyen bonds has been strong, with many investors expecting the Japanese currency to appreciate on the foreign exchange markets.

Less successful was a DM500m five-year issue by ABN Amro Bank, lead managed by Trinkaus & Burkhardt. Participants said the deal was too large and too tightly priced. From an issue price of 102, the deal fell to 99.60 bid by late afternoon, just inside full fees of 2¼ per cent.

NEW INTERNATIONAL BOND ISSUES

Borrower	Amount m.	Coupon %	Price	Maturity	Fees	Book runner
US DOLLARS						
British Gas Int.Fin.BV(b)†	1.5bn	zero	8.77	2021	(b)	Goldman Sachs
ECUs						
Mitsubishi Materials Corp(a)♦	300	6⅛	100	1995	2¼/1½	Nikko Secs.
STERLING						
3i Group(a)†	100	10¾	101.26	2001	2/1.6	Warburg Secs.
D-MARKS						
ABN Amro Bank NV(a)†	500	8½	102	1996	2½/1¼	Trinkaus & Burkhardt
GUILDERS						
Ned.Investeringsbk.(c)†	150	8¾	100½	2006	1/⅝	ABN Amro
YEN						
Province of Quebec(a)†	50bn	6¼	99.95	2001	0.325/0.20	IBJ Int.

**Private placement. §Convertible. ♦With equity warrants. ‡Floating rate note. †Final terms. a) Non-callable. b) Selling concession fee - 0.15. Non-callable. c) Full name of borrower - Nederlandse Investeringsbank Voor Ontwikkelingslanden NV. Early redemption from 5/11/2001 at 102%.

Ethical investors stay cool on S Africa

By Sara Webb

SOUTH Africa remains high on ethical investors' blacklists, according to a survey of investor attitudes released today.

Ethical Investment Research Service (Eiris), which screens companies to see whether they meet certain ethical criteria, found that "most ethical investors think the time is not yet right to relax their restrictions on company groups with South African interests", despite recent reforms in South Africa.

Companies such as Lonrho, Shell, BP, GEC, ICI, BTR, RTZ and Trafalgar House are likely to be avoided by ethical investors because of their South African interests, according to Eiris.

The group conducted a survey of readers of its publication, *The Ethical Investor*, and found that of the 493 people who responded to its questionnaire, 75 per cent have attempted to avoid South African investments recently, while only 7 per cent felt that the time had come to change their approach to investing in the area.

"Ethical investors do not feel that enough has happened [in South Africa] to merit a change in attitude," said Mr Peter Webster, executive secretary of Eiris. The group screens UK companies for eight of the ethical unit trusts, including Clerical & Medical's Evergreen Fund and Friends Provident Stewardship Trusts.

The survey found that nearly three-quarters of those ethical investors who have recently avoided investing in South Africa would be willing to drop their ban if the African National Congress and South African churches called for sanctions to be relaxed.

C.Itoh sets up US company

C.ITOH, the Japanese trading house, has set up an investment advisory company in New York with three US advisers, AP-DJ reports from Tokyo. The firm, Clinton Group,has initial capital of $580,000.

Freddie Mac rule-breakers all pay

By Patrick Harverson in New York

ALL THE 18 Wall Street securities houses and banks, disciplined last week by a US federal government securities agency for inflating orders and falsifying information on its debt securities, have agreed to pay fines totalling about $1m.

The Federal Home Loan Mortgage Corporation, known as Freddie Mac, confirmed the securities dealers it uses to sell debt to investors have agreed to comply with its sanctions imposed on Friday. Salomon Brothers agreed to pay the fine when it was imposed.

Freddie Mac fined each dealer a penalty equal to 20 per cent of its commissions from the corporation's 1990 and 1991 debenture sale. The dealers were placed on probation for a year and will be expelled from the group of firms that underwrite Freddie Mac's securities if they violate any other of the agency's policies.

Although the size of the fines were not large by Wall Street standards (they totalled about $1m, averaging just more than $55,500 a firm), the dealers faced a difficult choice over whether to pay them or not. By paying, they keep in the good books of Freddie Mac and US securities regulators, but their actions might be seen as acknowledgment of guilt, leaving the dealers open to possible legal actions by aggrieved investors.

Freddie Mac, which raises money to finance mortgages for US homebuyers, began investigating the inflation of customer orders for its securities and the falsifying of trade records after Salomon Brothers had confessed to using similar practices to rig the Treasury bond market. The dealers regularly overstated customer demand for agency debt to guarantee they received a large slice of each issue.

Other government agencies could fine dealers that have violated their policies during sales of securities. The Federal National Mortgage Association (Fannie Mae), the largest mortgage agency, said yesterday its inquiry into dealers' mis-statements and inaccuracies was continuing.

As the biggest issuer of debt in this sector of the market, the total fine imposed by Fannie Mae would be more than the $1m levied by Freddie Mac.

Analysts cut G7 profit forecasts

By Peter Martin

STOCK MARKET analysts have cut their 1991 profits forecasts for companies in the seven major economies, according to the IBES research service of Lynch, Jones & Ryan.

The IBES survey was carried out at the end of September by adding thousands of individual company earnings forecasts from analysts around the world. It shows that analysts expect earnings to fall in real terms in all the G7 economies.

In Canada, Japan, the UK and the US, analysts now expect corporate profits to shrink in nominal terms in 1991. That marks a shift towards pessimism during the summer: at the end of the second quarter, in June, none of the seven large economies was expected to show negative earnings growth this year.

However, for 1992 earnings, analysts have been revising their forecasts upward. Earnings in Canada, the UK and the US are expected to rebound next year. Nonetheless, even in nominal terms, 1992 earnings in all countries, except Germany, are expected to be below 1990 levels.

The IBES figures suggest that in all major economies, except Italy, the prospective price-earnings ratio has risen in the past three months.

Wall Street is selling on a prospective p/e of 17.1, up from the end-June figure of 15.7; London on 15.2 (13.1); Tokyo, usually a high p/e market, on 38.9 (36.4); and Canada on 18.5 (16.3).

The German market's p/e is little changed, selling on 13.7 (13.6); France is up to 12.5 from 11.5; and Italy, where the upward revision in forecasts has been most marked, has a p/e of 14.3 from 16.2.

CONSENSUS ESTIMATES FOR EARNINGS GROWTH

	EPS Growth % 1991	EPS Growth % 1992	Revision (% points) 1991	Revision (% points) 1992	P/E 1991 Jun	P/E 1991 Sept
Canada - TSE	-8.9	45.2	-11.0	+7.4	16.3	18.5
France - CAC 40	0.6	15.1	-2.3	+0.6	11.5	12.5
Germany - Dax	0.1	9.4	-0.1	+1.5	13.6	13.7
Italy - BCI	2.1	20.2	-11.4	+12.3	16.2	14.3
Japan - Nikkei	-1.7	5.4	-3.1	+2.4	36.4	38.9
UK - FTSE	-3.9	26.4	-6.7	+4.5	13.1	15.2
US - S&P 500	-4.5	28.7	-5.4	+3.7	15.7	17.1

Note: Data as at end-Sept 1991. Revision columns show how EPS growth estimates have changed since end-June 1991.
Source: Lynch, Jones & Ryan, New York

London SE issues traded options details

IN THE run-up to the merger of the London Traded Options Market (LTOM) and the London International Financial Futures Exchange (Liffe), the London Stock Exchange has issued details of contract specifications, clearing and settlement arrangements for traded options to member firms, writes Sara Webb.

The details will be forwarded to clients who are likely to have positions open on the stock exchange's London Traded Options Market after November 4 – which has been dubbed E-Day – or who intend to open positions after that date.

The merger of LTOM and Liffe is due to take place at the end of January 1992.

Following the merger, clients will have contracts with their broker rather than with the clearing house, as is currently the case.

When the merger takes place, those traded option positions which are open at the London Options Clearing House (the clearing house for the London Traded Options Market) will be transferred to the London Clearing House.

Saudi plans first set of Treasury bills

SAUDI Arabia, in need of funds as a result of the Gulf war, has drawn up plans for its first Treasury bill programme, AP-DJ reports from Manama.

According to banking sources in the kingdom, the government is planning to launch the bills next month in an effort to soak up some of the excess short-term liquidity in the Saudi banking system and stem the drain on its dollar reserves.

As well as providing a new source of revenue, the bills will answer a long-standing request from the cash-rich Saudi banks for a viable short-term debt instrument.

Saudi Arabia has been struggling to pay the estimated $70bn that the Gulf war cost the kingdom.

This year, Saudi Arabia borrowed $4.5bn from a group of international banks, its first overseas borrowing in more than 20 years. The government has been exploring ways to tap the huge pool of liquidity in the banking system.

Saudi banks have an estimated $25bn on deposit outside the kingdom.

The bills will replace the Bankers Security Deposit Accounts (BSDAs), short-term debt instruments that have been issued since 1985 by the central bank, the Saudi Arabian Monetary Agency. Saudi banks complain that the BSDA programme is inflexible and have pressed SAMA for changes.

LONDON MARKET STATISTICS

FT-ACTUARIES SHARE INDICES

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EQUITY GROUPS & SUB-SECTIONS. Figures in parentheses show number of stocks per section

	Equity groups & sub-sections	Mon Oct 7 Index No.	Day's Change %	Est. Earnings Yield% (Max.)	Gross Div. Yield% (Act at (25%)	Est. P/E Ratio (Net)	xd adj. 1991 to date	Fri Oct 4 Index No.	Thu Oct 3 Index No.	Wed Oct 2 Index No.	Year ago (approx) Index No.
1	CAPITAL GOODS (182)	837.90	-1.3	9.37	5.78	13.30	29.93	848.71	853.00	858.82	746.98
2	Building Materials (23)	1015.14	-1.1	7.44	6.14	17.68	40.19	1026.64	1038.56	1048.02	1019.24
3	Contracting, Construction (31)	1134.44	-1.3	8.24	6.42	16.59	45.06	1149.26	1162.03	1163.82	1216.18
4	Electricals (11)	2619.02	-0.8	8.37	5.04	15.14	72.48	2639.23	2645.40	2668.69	2028.21
5	Electronics (25)	1764.93	-2.1	10.85	5.40	11.65	49.55	1802.85	1798.27	1823.47	1643.94
6	Engineering-Aerospace (8)	367.93	-1.4	16.80	6.82	7.18	16.48	373.23	375.73	371.32	431.92
7	Engineering-General (43)	495.71	-0.9	9.92	5.15	12.45	15.79	500.15	503.05	503.16	385.67
8	Metals and Metal Forming (9)	451.07	-0.6	14.58	7.86	8.33	17.48	453.80	458.97	463.99	425.51
9	Motors (12)	344.26	-1.6	8.67	6.99	14.73	14.65	349.76	351.43	352.91	286.72
10	Other Industrial Materials (20)	1615.57	-1.3	7.85	5.05	15.15	56.55	1636.36	1638.39	1653.70	1229.76
21	CONSUMER GROUP (189)	1546.78	-0.8	7.40	3.61	16.71	31.94	1559.77	1559.97	1569.02	1236.93
22	Brewers and Distillers (22)	1941.06	-0.6	7.98	3.46	15.26	38.33	1953.18	1948.61	1954.99	1542.40
25	Food Manufacturing (19)	1228.69	-0.7	9.22	4.07	13.39	26.32	1237.61	1242.23	1251.91	1044.19
26	Food Retailing (17)	2494.90	-2.0	8.92	3.39	14.66	50.36	2546.62	2576.39	2569.83	2424.52
27	Health and Household (22)	3698.60	-0.6	5.47	2.56	20.98	58.55	3722.46	3714.60	3744.04	2481.45
29	Hotels and Leisure (24)	1327.49	-1.0	7.67	5.30	16.11	37.73	1340.58	1336.69	1338.33	1244.85
30	Media (26)	1519.32	-0.6	7.09	4.67	18.43	43.94	1528.72	1528.42	1549.04	0.00
31	Packaging, Paper & Printing (17)	771.99	-0.9	7.28	4.23	16.67	22.26	779.26	781.35	784.76	507.51
34	Stores (33)	989.15	-0.7	7.51	3.75	17.44	19.20	996.52	993.74	1001.81	833.91
35	Textiles (9)	628.33	-0.8	7.36	4.95	17.24	15.16	633.10	633.01	635.38	415.08
40	OTHER GROUPS (109)	1303.27	-1.2	9.24	4.98	13.61	35.68	1319.16	1320.24	1330.48	1024.41
41	Business Services (12)	1432.74	-1.0	7.45	4.56	16.68	34.95	1447.24	1437.09	1431.43	0.00
42	Chemicals (21)	1463.05	-0.4	6.89	4.95	17.91	48.39	1468.61	1466.32	1485.69	1039.22
43	Conglomerates (10)	1513.33	-1.4	9.64	6.95	12.57	38.76	1534.62	1530.88	1547.87	1384.24
44	Transport (13)	2376.39	-1.6	7.17	4.78	17.27	66.37	2415.58	2423.41	2425.36	1952.95
45	Electricity (16)	1259.36	-1.1	13.95	5.17	9.35	27.53	1273.53	1280.67	1286.51	0.00
46	Telephone Networks(4)	1615.85	-1.3	9.28	3.75	14.11	28.34	1636.61	1645.15	1658.67	1157.77
47	Water(10)	2505.82	-1.2	16.30	6.14	6.79	118.37	2536.23	2526.70	2533.94	1960.39
48	Miscellaneous (23)	1880.90	-1.7	5.27	5.23	26.30	69.66	1912.67	1904.83	1929.10	1602.73
49	INDUSTRIAL GROUP (480)	1296.08	-1.0	8.38	4.47	14.88	33.31	1309.68	1311.37	1320.08	1053.26
51	Oil & Gas (20)	2441.75	-0.3	10.69	5.69	12.36	92.91	2449.55	2435.48	2440.24	2419.19
59	500 SHARE INDEX (500)	1394.38	-1.0	8.67	4.62	14.51	38.03	1407.76	1408.36	1416.91	1165.09
61	FINANCIAL GROUP (91)	812.28	-1.1	-	5.76	-	30.50	821.63	825.38	832.24	734.68
62	Banks (9)	954.20	-1.2	4.37	5.59	43.27	36.83	965.72	964.50	977.08	797.01
65	Insurance (Life) (7)	1514.31	-0.8	-	5.59	-	62.78	1527.20	1545.59	1559.86	1431.62
66	Insurance (Composite) (6)	614.60	-2.1	-	7.14	-	28.25	627.69	635.37	632.20	644.11
67	Insurance (Brokers) (9)	1167.01	-0.8	7.04	5.81	18.60	42.45	1176.29	1178.77	1180.18	827.73
68	Merchant Banks (7)	480.28	-0.5	-	4.39	-	13.08	482.91	480.77	482.75	356.77
69	Property (36)	936.30	-0.9	5.85	4.99	24.18	23.01	945.16	955.54	965.78	937.04
70	Other Financial (17)	258.75	+0.4	11.10	7.10	11.31	10.84	257.79	258.04	260.73	252.78
71	Investment Trusts (70)	1246.51	-0.6	-	3.46	-	26.66	1254.43	1256.36	1259.85	1031.69
99	ALL-SHARE INDEX (661)	1253.92	-1.0	-	4.74	-	35.71	1266.15	1267.41	1275.36	1058.54

	Index No.	Day's Change	Day's High (a)	Day's Low (b)	Oct 4	Oct 3	Oct 2	Oct 1	Sep 30	Year ago
FT-SE 100 SHARE INDEX♦	2596.2	-28.4	2614.6	2594.2	2624.6	2625.6	2644.2	2645.6	2621.7	2201.6

FIXED INTEREST

	PRICE INDICES	Mon Oct 7	Day's change %	Fri Oct 4	Accrued interest	xd adj. 1991 to date
	British Government					
1	Up to 5 years (28)	122.45	+0.03	122.41	1.93	9.31
2	5-15 years (27)	136.13	+0.17	135.90	2.34	10.24
3	Over 15 years (9)	144.35	+0.22	144.04	1.66	10.60
4	Irredeemables (6)	161.26	+0.08	161.13	3.68	8.83
5	All stocks (70)	134.09	+0.13	133.92	2.19	10.07
	Index-Linked					
6	Up to 5 years (2)	166.29	+0.03	166.24	0.52	2.72
7	Over 5 years (9)	149.06	+0.11	148.89	0.84	3.42
8	All stocks (11)	150.31	+0.10	150.16	0.79	3.40
9	Debs & Loans (68)	114.70	+0.02	114.68	1.94	8.33

	AVERAGE GROSS REDEMPTION YIELDS		Mon Oct 7	Fri Oct 4	Year ago (approx.)
	British Government				
1	Low	5 years	8.48	8.44	10.62
2	Coupons	15 years	9.37	9.38	10.62
3	(0%-7¾%)	20 years	9.37	9.39	10.62
4	Medium	5 years	9.60	9.61	11.25
5	Coupons	15 years	9.48	9.51	11.11
6	(8%-10¾%)	20 years	9.45	9.47	11.06
7	High	5 years	9.82	9.84	11.40
8	Coupons	15 years	9.55	9.58	11.34
9	(11%-)	20 years	9.49	9.51	11.31
10	Irredeemables		9.58	9.59	10.76
	Index-Linked				
11	Inflation rate 5%	Up to 5yrs	3.78	3.79	3.89
12	Inflation rate 5%	Over 5 yrs	4.22	4.22	4.30
13	Inflation rate 10%	Up to 5 yrs	3.19	3.19	2.75
14	Inflation rate 10%	Over 5 yrs	4.05	4.05	4.13
15	Debs &	5 years	11.20	11.18	14.06
16	Loans	15 years	11.01	11.00	12.79
17		25 years	10.83	10.82	12.39

♦Opening index 2614.6; 9 am 2604.2; 10 am 2601.7; 11 am 2596.1; Noon 2598.5; 1 pm 2602.1; 2 pm 2598.5; 2.30 pm 2596.1; 3 pm 2594.9; 4.10 pm 2596.0; (a) 8.30am (b) 2.56pm † Flat yield. Highs and lows record, base dates, values and constituent changes are published in Saturday issues. A list of constituents is available from the Publishers, The Financial Times, Number One, Southwark Bridge, London SE1 9HL. The FT-ACTUARIES SHARE INDICES SERVICE covers a range of electronic and paper-based products relating to these indices. These are available by subscription from FINSTAT, Ibex House, 42-47 Minories, London EC3N 1DY. Tel: 071-702 0991.

RISES AND FALLS YESTERDAY

	Rises	Falls	Same
British Funds	49	3	31
Corporations, Dominion and Foreign Bonds	8	0	12
Industrials	145	412	939
Financial and Properties	69	207	482
Oils	14	21	55
Plantations	0	2	8
Mines	71	23	59
Others	47	47	37
Totals	403	715	1,623

LONDON RECENT ISSUES

EQUITIES

Issue Price p	Amount Paid up	Latest Renunc. Date	1991 High	1991 Low	Stock	Closing Price p	+ or -	Net Div	Times Cov'd	Gross Yield	P/E Ratio
180	F.P.	-	198	188	Adam & Harvey	193		W10.0	5.9	6.9	3.3
†	F.P.	-	110	105	Capital Ventures 1p	109	-1	-	-	-	-
4	F.P.	-	9½	4¼	Culver 1p	5½	+½	-	-	-	-
-	F.P.	-	23	18	Eng. & Scott. Wrrnts.	20	-2	-	-	-	-
-	F.P.	-	320	213	Eurotunnel '91 Wrnts.	293	-20	-	-	-	-
100	F.P.	-	114	105	Gartmore Scotland Inc.	113		M11.6	-	13.7	-
100	F.P.	-	99	85	Do. Capital	98		-	-	-	-
-	F.P.	-	£665	£605	Do. Units	£665		-	-	-	-
146	F.P.	-	169	148	Irish Life Ir10p	169		HQ102%	-	5.4	-
§§290	F.P.	-	346	297	Lowndes Lambert 5p	341	-1	111.5	1.9	4.5	15.9
50	F.P.	-	54	47	§Simpsons of Cornhill 5p	48		-	-	-	14.9
1	F.P.	-	½	½	§Standco 1p	½		-	-	-	-

FIXED INTEREST STOCKS

Issue Price £	Amount Paid up	Latest Renunc. Date	1991 High	1991 Low	Stock	Closing Price £	+ or -
100	F.P.	-	100	98½	Camborne Inds. 10½pc Rd. Deb. 2001	99½	
100	F.P.	-	90	77½	Claybithe 9½pc Cnv. Ln. 2000-01	79½	
100p	F.P.	-	111½p	104¼p	Gartmore Scotland Zero Div Prf.	111p	
-	F.P.	-	96	95⅛	Land Securities 10pc 1st Mtg Deb 2027	96	
100p	F.P.	-	104p	102½p	NatWest Bank 9pc Prf Series A	103¼p	+¼
-	F.P.	-	107½	107½	Third Mile 8pc Cv Uns Ln 2001	107½	

RIGHTS OFFERS

Issue Price p	Amount Paid up	Latest Renunc. Date	1991 High	1991 Low	Stock	Closing Price p	+ or -
160	Nil	-	38½pm	25pm	Hickson International	27pm	-2½
210	Nil	-	11pm	2pm	Hillsdown Hldgs. 10p	4pm	+½
85	Nil	-	16pm	12pm	Record Hldgs. 5p	16pm	
14½	Nil	-	2pm	½pm	Starmin 5p	½pm	-¼
200	Nil	-	10pm	4pm	Third Mile Inv. Units	4pm	
45	Nil	-	23pm	16pm	♦Trans World Comms. 10p	17pm	

a Annualised dividend. b Figures based on prospectus estimates. d Dividend rate paid or payable on part of capital, cover based on dividend on full capital. g Assumed dividend and yield. e Earnings based on preliminary figures. u Forecast or estimated annualised dividend rate, cover based on previous year's earnings. F Dividend and yield based on prospectus or other official estimates for 1990-91. H Dividend and yield based on prospectus or other official estimates for 1991. L Estimated annualised dividend, cover and p/e based on latest annual earnings. M Dividend and yield based on prospectus or other official estimates for 1991-92. N Dividend and yield based on prospectus or other official estimates for 1992. Q Gross. R Forecast annualised dividend, cover and p/e ratio based on prospectus or other official estimates. W Pro Forma figures. § Offered to holders of ordinary shares as a "rights". † Introduction. § Placing price. †† Reintroduction. ♦ Unlisted securities market. ♦ Issued in connection with reorganisation, merger or takeover. pm Price at a premium.

TRADITIONAL OPTIONS

- First Dealings Oct 7
- Last Dealings Oct 18
- Last Declarations Jan 9
- For settlement Jan 20

For rate indications see end of London Share Service

Calls in: Amstrad, Berisford, Brent Walker, Colorgen, Hi-Tech, National Home Loans. Put in: Maxwell Communications.

LONDON TRADED OPTIONS

Option		Calls Oct	Calls Jan	Calls Apr	Puts Oct	Puts Jan	Puts Apr
Alld Lyons (*618)	600	29½	54½	74½	9½	27½	33½
	650	8	30	49½	38½	53½	59½
	700	[illegible]	18	31½	82½	88½	92½
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Option		Calls Nov	Calls Feb	Calls May	Puts Nov	Puts Feb	Puts May
BAA (*462)	460	17½	29	42½	11½	20½	23½
	500	4	11½	22	38	42½	45½
BAT Inds	650	21½	45½	56½	15	21½	32½
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Option		Calls Dec	Calls Mar	Calls Jun	Puts Dec	Puts Mar	Puts Jun
Hillsdown (*216)	216	10½	16½	-	11½	14½	-
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

UK COMPANY NEWS

Nadir loses contempt battle

MR ASIL NADIR, the chairman of Polly Peck International, yesterday lost a battle in the High Court to have contempt proceedings, which have been launched against him by his personal creditors, struck out, writes David Barchard.

The nine creditors, including the Inland Revenue, allege that Mr Nadir, who owes them a total of $80m (£45m) should be jailed for breaching a court undertaking to pay his debts in return for the dropping of bankruptcy proceedings against him.

Mr Nadir went on to sell Impex Bank, a small Turkish bank for $27m to the Karamehmet and Ellyeşil families. However, no payment was received for the deal and Mr Nadir had not adhered to scheduled debt payments in March and June.

The creditors may now have to travel to Turkey to investigate the exact legal situation surrounding the sale and present ownership of Impex Bank.

Mr Nadir was refused leave to appeal, though he can still apply directly to the Court of Appeal for leave.

The prison committal move will now be heard in the High Court in December or early January next year.

PPI's hopes rest on floating fruit

David Barchard on today's meeting of creditors and administrators

ADMINISTRATORS of Polly Peck International, the collapsed electronics and fruit conglomerate, go into a crucial meeting today with the committee representing the group's creditors.

Unless the administrators can convince the five man committee of bankers to approve a flotation of PPI Del Monte on the New York stock exchange, chances of keeping the group out of liquidation will be slim.

Polly Peck International went into administration in October last year with debts of £1.3bn.

Since the creditors' last meeting with the administrators, the administration has sold a controlling interest in Sansui Group, the Far Eastern electronics group which was one of Polly Peck International's three main subsidiaries, for a token amount to Grande Holdings of Hong Kong. The move followed indications that Sansui would incur much heavier losses than expected during the present year.

Mr Michael Jordan of Cork Gully, the senior administrator, and Mr Richard Stone of Coopers & Lybrand Deloitte, will argue that the group should turn down several uninvited offers for PPI Del Monte. These include one from a consortium headed by Mr Greg Aziz, a US businessman, who is advised by Kidder Peabody.

The administrators believe that an auction of PPI Del Monte would fetch less than $700m (£402m) while an initial public offering might raise between $700m and $1bn.

Michael Jordan: believes uninvited offers for Del Monte should be rejected

The five members of the creditors' committee elected last May now accept that realistic prospects of ordinary shareholders getting their money back are fading.

As a result, Mr Jordan will have to work hard to convince them that any useful purpose is still being served by keeping the group in existence.

Creditors are understood to be sceptical that any significant amount of funds can be released from northern Cyprus, despite months of work by Mr Stone.

He will give the creditors details today of the partial lifting of a Turkish Cypriot court injunction which barred the administrators access to the group's records and bank accounts on the island. He is expected to say that he remains optimistic that some funds can be unlocked.

Mr Menteş Aziz, a prominent Turkish Cypriot lawyer who has played a key role in the negotiations between the administrators and the Turkish Cypriot authorities, has been in London in the last few days.

Support for plan to take Caparo Inds private

By Jane Fuller

MR SWRAJ Paul and his family are close to taking Caparo Industries private after gaining overwhelming support for their plan at an extraordinary general meeting in London yesterday.

Caparo Group, Mr Paul's private concern, is offering 64p per share to buy the 20.6 per cent of Caparo Industries which it does not own. The offer values the steel-based engineering business at £59.4m. It will cost the private group £13m in bank borrowings to carry out the plan.

Caparo did not vote at the EGM, where financial advisers were said to have comfortably outnumbered shareholders. About 99 per cent of the vote was in favour of the scheme of arrangement and the votes cast covered 53 per cent of the non-Caparo-held shares.

Mr Paul, chairman of both companies, said that since the October 1987 stock market crash, smaller industrial companies like Caparo had had difficulty generating investor interest. The high proportion of Caparo's shares controlled by the family had exacerbated this.

A sluggish share price had led the company to finance acquisitions by bank debt rather than equity issues, so making little use of the listing.

Short-term considerations about the share price were, in any case, out of step with long-term capital spending decisions in "an old-fashioned business", he said. "You sometimes have to go by instinct when spending money to achieve results in 1993-94."

Caparo's share price reached 80p before the 1987 crash, but since then the peak has been about 75p in mid-1990. This year the price has bounced from 46p in January to just over 60p in the spring and back to 47p before the offer was announced on September 11.

In the first half of the year, pre-tax profit dropped 41 per cent to £5.3m on sales of £115.2m (£123.9m).

In 1989, Caparo Group made a pre-tax profit of £8m on sales of £254.5m. Last year Caparo Industries made £15.7m pre-tax on sales of £229.7m.

NEWS DIGEST

Monarch Res loss cut to $1.9m

TAXABLE LOSSES at Monarch Resources, the London-quoted company with gold operations in Venezuela, were cut from $3.76m to $1.88m, or £1.08m, for the half year ended June 30.

Mr Michael Beckett, chairman, said activities of the Revemin plant, its Venezuelan operations which recover gold from dumps, had improved in efficiency and had generated a positive cash flow over the period while essentially breaking even on a profits basis.

The turnround at the plant began in the second quarter when an operating profit of $275,000 and an operating cash flow of $567,000 were recorded. That was in contrast to operating losses and cash flow deficits in 1990.

Tax on mining profits in Venezuela has been halved to 30 per cent.

Gold production at the Revemin plant for the half year totalled 11,723 ounces (3,348 ounces). July production amounted to 2,784 ounces and that for August 2,979 ounces, a record month.

Directors said that at current levels, Revemin's annual gold production rate would exceed 30,000 ounces.

The Cyprus Gold company of the US has decided to proceed to the next stage of the development of the La Camorra project and has paid Monarch $500,000 under terms of the joint agreement.

Turnover for the six months totalled $4.29m ($1.62m). Interest receivable fell from $431,000 to $110,000. Losses per share worked through at $0.133 ($0.276).

Private sector boost for United Uniform

An increase in private sector business and the successful introduction of a range of fire retardant clothing helped lift interim pre-tax profits at United Uniform Services from £421,000 to £1.42m.

Turnover for the six months to June 30 rose from £4.07m to £24.6m, although the two periods are not strictly comparable as the company only owned its Horace Small subsidiary – which also manufactures uniforms – for one month of the 1990 period.

Earnings per share amounted to 3.9p (5.7p). There is a maiden interim dividend of 1p.

Buoyant Greenacre advances by 71%

Greenacre Group, the nursing homes operator, lifted pre-tax profit by 71 per cent in the opening half and forecast a further strong performance in the current six months.

Mr Tony Acton, chairman, said the group had five homes and operated 218 beds. Further acquisitions and developments were under negotiation and/or planned. Early last month £3.7m was received via the call of the final instalment on the convertible redeemable preference shares.

Turnover in the six months to July 31 rose to £1.26m (£1.11m) while profit came through at £377,000 (£220,000). Earnings per share were 0.27p (0.21p) and the interim dividend is 0.125p (0.1p).

Mr Acton said nursing homes accounted for £330,000 (£210,000) as a result of improved operating performance from the two Scottish units, a full contribution from Salterley Grange in Cheltenham, and a four month share from the newly acquired Elm Grove in Cirencester.

Tyro, the packing company based in Kent, remained profitable but experienced difficult trading conditions.

Bridgend looking to second half

Bridgend Group suffered a 6 per cent drop in first half profits, but said trading conditions in the current period were proving better.

"The board is encouraged by the current progress of the group", Mr Neil List, chairman, told shareholders.

Turnover of the group, which has interests in the distribution and services and leisure industries, surged from £2.7m to £8.24m, but taxable profit fell to £403,000 (£430,000).

Earnings per share were down to 1.05p (1.66). The interim dividend is again 0.4p.

Mr List recalled that in 1990 a high proportion of profits was represented by deposits in the money market. That had been replaced by the acquisition of John Sydney, a distributor of taps, showers and bathroom fittings, which had maintained profitability and market share despite the recession.

The other specialist distributor, Brimleys, supplied electrical equipment to the shipping industry, and had marginally increased profits.

Leisure division started well but could not keep up the momentum in the second quarter. Assets employed had been enhanced with some cost to current revenue; losses should be reduced in the second half, Mr List claimed.

Headlam down 21% in opening half

In tough trading conditions all three subsidiaries of Headlam Group continued to operate profitably, although pre-tax profit for the first half of 1991 fell 21 per cent to £213,000.

This is the first interim statement since Mr Graham Waldron was appointed chairman of this footwear and fabrics group in June.

The shares are in temporary suspension pending the acquisition of Hickson Flooring Distributors for some £10.5m cash, details of which were announced at the beginning of last month.

Mr Waldron said the business of HFD should benefit considerably from Headlam's experience of textile distribution and the wholesale floor coverings' market. It would be a core activity of the group.

First half profit was struck after an £89,000 (£125,000) exceptional charge for early termination of a director's employment.

Turnover was £11.5m (£12.1m). Earnings per share were 1.41p (1.75p) and the interim dividend is held at 0.75p.

Mid-Sussex Water bids to convert to plc

The board of Mid-Sussex Water Company is recommending its conversion to plc status, registered under the 1985 Companies Act and the adoption of a memorandum and articles of association in substitution for its local statutory provision.

South-East Water, a wholly owned subsidiary of Saur Water Services, has indicated its intention to vote in favour in respect of its 97.4 per cent of the voting stock.

Mid-States hit by falling car part sales

The Gulf war and the recession in the US contributed to a reduction, from £2.69m to £2.33m, in first half profits at Mid-States, the USM-quoted car part distributor.

Group profits come from the Nashville-based subsidiary Mid-State Automotive Distributors, and they were hit by an average 10 per cent fall in the dollar-sterling exchange rate.

Turnover for the six months to June 30 was up from £20.2m to £23.8m, reflecting the inclusion of the Knoxville and Chattanooga-based companies acquired in July last year. Borrowings made to fund these acquisitions resulted in an interest charge of £354,000 (£101,000 received).

Earnings per share came out at 4.2p (4.5p) and the dividend is maintained at 0.75p.

"The group has seen some limited signs of a pick up in demand during recent weeks, but it is still too early to tell if this signals an end to the recession," said Mr Bill Cherry, group chief executive.

Second Market net asset value at 244.4p

Second Market Investment Trust reported net asset value of 244.4p at June 30, down from 276.1p a year earlier but higher than the 221.6p at December 31.

The trust specialises in companies quoted on the second market of the French stock exchange, and directors said that since the beginning of the year the Paris Bourse had broken out of the downtrend precipitated by the Gulf war.

Net profit for the six months to June 30 was £123,000 (£146,000) for earnings per share of 1.24p (1.48p).

Gross income was £475,000 (£619,000) with investment income of £343,000 (£363,000) and bank interest down at £132,000 (£256,000), the result of more funds being invested in equities. At the end of the period 2 per cent of the portfolio was in cash compared with 22.5 per cent at December 31 and 9.1 per cent at June 30 1990.

TSB sells insurance broker for £35m

By David Barchard and Richard Lapper

TSB, the sixth largest UK banking group, has sold Hill House Hammond, its 133-branch retail insurance broker, to Norwich Union for £34.5m.

The move follows a recent decision by TSB to sell off financial service subsidiaries outside its core banking and insurance operations. Hill House Hammond specialises in motor and household insurance, and is planning to develop its life assurance business as a tied agent.

Net brokerage income in the present year is expected to be £19m with pre-tax profits of £2.7m.

"Hill House Hammond was a competing business on the high street without the TSB brand and therefore we took a decision a while back to sell it in no particular hurry, but this was a splendid offer and we decided to accept it," said Mr Don McCrickard, TSB chief executive.

Mr Albert Mills, Norwich Union general manager, said yesterday that Hill House Hammond would be preserved with its management, staff and trading name unchanged.

The broker was acquired by TSB in 1987 as part of Hill Samuel. The sale will be completed by October 31.

Norwich Union's purchase of Hill House Hammond is the biggest acquisition by the mutually-owned company since its ventures into Spain and New Zealand over a year ago.

It is the group's first move into high street retail distribution and comes at a time of increasing competition in the personal lines insurance market, in which control over sales is an increasingly important element.

Norwich Union currently distributes 90 per cent of its policies via independent brokers. Mr Mills said: "This acquisition in no way diminishes Norwich Union's commitment to its traditional intermediary network."

Other UK general insurers are also tightening their links with brokers. Last year Sun Alliance, for example, acquired a majority stake of the Manchester-based brokers Swinton. Eagle Star, the BAT insurance subsidiary, has a significant minority stake in AA Insurance Services.

Shareholders approve BAe's £432m cash call

By Paul Betts, Aerospace Correspondent

BRITISH Aerospace shareholders yesterday approved by an overwhelming 99.8 per cent majority the beleaguered company's £432m rights issue but criticised its management and recent performance.

Lengthy complaints of the company's board and handling of the rights issue were voiced by small shareholders at an extraordinary general meeting to approve the company's first cash call since privatisation in the early 1980s. The 2-for-5 issue with the new shares offered at 380p closes on October 28 and is designed to raise new equity to ease the company's immediate short term cash needs.

Sir Graham Day, BAe's interim chairman, said he was confident the rights issue would be supported. Despite criticisms from small shareholders, there were no public complaints by institutional investors yesterday.

BAe's top management has been engaged in an intensive lobbying campaign during the last two weeks to try to rebuild the company's credibility with the City and institutional investors following the bungled launch of the rights issue and its grim profits warning for 1991.

Although City institutions are expected to support the issue, they remain unhappy about the company's handling of its cash call and continue to have doubts over BAe's current management and financial prospects.

Some institutional investors said yesterday they were expecting Sir Graham to strengthen BAe's management to exert a tighter grip on its finances as a condition for their support. Institutional investors also want BAe to pursue other means of raising cash, through disposals and the formation of joint-ventures to ease pressures on its cashflow in the next couple of years.

BAe shares fell 13p to close at 402p yesterday.

Sir Graham confirmed his support for BAe's management team and said it was particularly galling for the company to be subject to "unnecessary and potentially damaging speculation." He added that the speculation had been encouraged "by third parties whose interests may differ sharply from those of the company, its shareholders, employees and customers."

Sir Graham said there had been no approach from the UK General Electric Company over a possible alliance between the two groups. "I would hate to see this company called General Electric. It does not quite have the same ring."

He also claimed BAe was facing short term cash flow pressures that were not indicative of the company's medium term prospects. The company is forecasting sharply lower pre-tax profits of £150m this year compared with £376m last year.

But many aerospace analysts and City institutions are worried that the company's problems run much deeper because of the declining trend in defence orders and the difficulties of its civil aircraft, property and car operations.

Whyte & Mackay's bid for Invergordon gets green light

By Philip Rawstorne

WHYTE & Mackay, the drinks subsidiary of American Brands, the US tobacco group, was yesterday given the all-clear by Mr Peter Lilley, the trade and industry secretary, for its £286m hostile bid for Invergordon Distillers.

Mr Lilley announced that, on the recommendation of the Director-General of Fair Trading, the bid would not be referred to the Monopolies and Mergers Commission.

Whyte & Mackay promptly extended its cash offer of 225p until October 15. However, at the end of last week it had fewer acceptances than on the first closing date on September 17 – only 23,288 shares, 0.02 per cent of the company, compared with 27,228. It owns a further 465,000 shares, representing 0.4 per cent.

Invergordon's shares rose 10p to 267p on hopes of a higher offer. The bidder said yesterday that it would consider its position in the light of any new financial information made available by Invergordon by tomorrow.

Analysts are suggesting that a figure of between 275p and 300p will be required to stand any chance of moving Invergordon's shareholders.

Mr Chris Greig, Invergordon's managing director, said yesterday that the "derisory" level of acceptances demonstrated the loyalty of shareholders – who include many employees – and their faith in the company's future as an independent business.

Chris Greig – led £92m management buy-out in 1988

Mr Greig, who led a £92m management buy-out of the company in 1988 and then brought it back to the stock market last year, reported interim profits 60 per cent higher at £13.1m last month and forecast a 41 per cent increase to not less than £32m for the full year.

Mr Michael Lunn, chairman and chief executive of Whyte & Mackay, said then that the results had done nothing to change his view that his 225p cash offer was generous. It compared with a share price of 163p before the offer, and shareholders should consider where the price would be without the bid.

See Lex

Alan Paul warns of profits cut

By Michiyo Nakamoto

ALAN PAUL, the USM-quoted hairdressing group which recently suffered a low take-up of its rights issue, warned that interim profits would be "materially below" expectations. It is also deferring its move to the main market.

The group blamed the combined effects of high costs and lower than expected sales in the first half of the year for the anticipated fall in pre-tax profits from last time's £1.5m.

Mr Clive Warner, finance director, said that the costs of running the group had risen.

Alan Paul has expanded its operations rapidly. In particular, the £8.5m acquisition in May last year of Essanelle, a hair and beauty salon business with shops in the UK and Germany, quadrupled the number of salons.

The recession, had already hit Body & Face Place, the loss-making manufacturer and retailer of beauty treatment products, and was now beginning to bite in the hairdressing business, which had previously been seen to be recession-proof.

Tighter credit also meant that there would only be about 50 new franchises, compared with 70 last year in hairdressing alone.

The shares, which have fallen considerably from their peak of 142p this year, yesterday fell to 69p, well below the 88p price of the £5.3m rights issue which closed in August with only a 15 per cent take-up.

The group plans to strengthen the board with new appointments and so is deferring its introduction to the main market.

Pickford business travel sale

By David Churchill, Leisure Industries Correspondent

NFC, the transport and distribution group, is selling its Pickford business travel operation for £10.5m to Wagon-Lits, the French travel group.

The sale follows negotiations lasting several months but does not include Pickford's retail travel business operations, which are expected to be sold to the Carlson Travel group in the US. Earlier this year Carlson, which already owns the AT Mays travel agency chain in the UK, bought WH Smith's UK travel agency operations.

NFC had been looking for a buyer for its travel operations for some time after taking a corporate decision to move out of the market. However, the impact of the Gulf war and recession held up the sale.

Also, it would have preferred to sell the entire Pickford travel operation as a going concern. Potential buyers, however, were deterred by the downturn in leisure and business travel this year.

Under the terms, Wagon-Lits is licenced to operate the Pickford business travel service for at least three years.

Pickford business travel operates through 48 stand-alone business travel centres and 29 travel operations within companies. It employs some 700 staff and had turnover last year of over £200m.

Wagon-Lits operates a travel network of 939 outlets in 38 countries, employing over 6,000 people, and has a total turnover of £1.7bn.

Mr James Wilson, chairman of NFC, said yesterday that it had decided on the sale because it could not justify investing further in the travel industry which he described as a "non-core activity."

Expansion into Spain planned by Watmoughs

By Raymond Snoddy

WATMOUGHS (Holdings), one of the UK's largest printers, is planning a substantial expansion into Spain.

The Bradford-based company, which specialises in gravure printing of periodicals, catalogues and company reports, wants to set up a sophisticated gravure plant in Spain.

Modern gravure plants normally involve an investment of about £30m.

Mr Patrick Walker, chairman and chief executive, confirmed that negotiations were at an advanced stage but declined to give any further details.

Last February Watmoughs acquired a majority stake in Revai, a Hungarian printer.

The subsidiary has already won a contract to print a Hungarian television listings magazine and the in-flight magazine for Malev, the Hungarian state airline.

The Spanish investment, however, would be on a much larger scale.

The plan is based on the fact that Spain's two main listings gravure plants are owned by media groups Bertelsmann of Germany and Hachette of France.

Watmoughs clearly wants to offer an alternative for independent publishers who would prefer not to have to do business with the printing arms of rival publishers.

In July the company produced a special edition of Hallo magazine for the Spanish publisher Hola to mark the 10th wedding anniversary of the Prince and Princess of Wales

Watmoughs prints magazines such as Country Living and Harpers & Queen as well as annual reports for companies such as British Gas, Marks and Spencer and Unilever.

Cooper Clarke dives £274,000 into the red

Cooper Clarke Group, the USM-quoted builders' merchant, incurred a loss of £274,000 pre-tax for the 12 months to April 28.

In his first annual statement as chairman, Mr Nicholas Jeffrey said the outcome – against profits last time of £983,000 – reflected the recession in the construction industry. Bad debts, he said, rose by a figure equivalent to 1.4 per cent of turnover.

Recovery from recession would be "long and hard", he added.

Interest charges rose to £299,000 (£166,000). The group has taken steps to reduce its borrowings, and gearing, which stood at 165 per cent at the year-end, is currently only about 15 per cent following completion of an asset disposal programme and receipt of £1.5m from the rights issue in April.

Closure costs were taken below the line, providing the main part of an extraordinary charge of £508,000.

Turnover declined to £20.8m (£22.4m). Losses per share emerged at 2.01, against earnings last time of 8.74p, and the final dividend is passed leaving 0.5p (4.5p) for the year.

Countyglen incurs I£96,000 loss

Countyglen, the Dublin-based property trading group, incurred a I£96,000 (£88,000) loss, in the year ended April 30. That reflected the costs of examining various proposals in Ireland and abroad.

For the previous 12 months the company returned profits of I£464,000 but that included an insurance settlement.

The company disposed of properties in Tallaght and Terenure.

Losses per share were 2.7p (earnings 11.5p).

Profits warning lops 25% off Kunick share price

By Jane Fuller

THE SHARE price of Kunick, the amusement machine and nursing homes group, yesterday fell 25 per cent to 26½p after a profit warning.

The disappointment comes five months after a £17.6m 2-for-9 rights issue priced at 33p per share. When that was announced alongside a 9 per cent decline to £7.3m in interim pre-tax profits, the full-year forecast was about £17m.

Yesterday Kunick said 1990-91 pre-tax profits would be about 20 per cent lower than revised market expectations of between £15m and £16m. This leaves the latest estimate at little more than £12m, with earnings per share of 3p.

Mr Russell Smith, chairman, blamed a poor last quarter by the leisure division for the sharp downturn. He said that although pubs had initially proved fairly recession-resistant, that had not proved to be the case over the past few months.

Fewer people in pubs meant fewer playing the amusement machines, of which Kunick supplies 44,000 in the UK – half of them fruit machines and the rest a mixture of juke boxes, pool tables and video games. It bought Cope Allman's Bell Fruit amusement business in 1989, taking it into second place in the market behind Allied Leisure, the Bass subsidiary.

Mr Peter Sherlock, chief executive of Bass's leisure division, echoed the concerns about recession, saying that spending in pubs had been one of the last areas to suffer. It might also be slow to recover as pent-up demand was released first for consumer goods.

In the amusement machine business, the biggest single problem had been the reluctance of pub proprietors to pay realistic rents, coupled with a tendency to cut the number hired. The greater power wielded by publicans stemmed from the enforced reduction in the number of controlled tenancies and increase in free houses.

Mr Smith at Kunick said its leisure division's problems had been compounded by the reduction in tourists visiting the London Dungeons, which recreates lurid scenes from the capital's past, such as the plague.

The group's nursing homes, home care agency and private hospitals, built up with the help of cash from the fruit machines, had performed well. They were providing nearly 40 per cent of operating profit compared with 20 per cent two years ago.

DIVIDENDS ANNOUNCED

	Current payment	Date of payment	Corres-ponding dividend	Total for year	Total last year
Bridgend ......int	0.4	Nov 26	0.4	-	1.2
Cooper Clarke § ......fin	nil	-	3	0.5	4.5
Greenacre ......int	0.125	Nov 29	0.1	-	0.225
Headlam ......int	0.75	Nov 22	0.75	-	2.4
Mid-States § ......int	0.75	Nov 6	0.75	-	3
United Uniform ......int	1	Nov 28	-	-	1.5

Dividends shown pence per share net except where otherwise stated. *Equivalent after allowing for scrip issue. †On capital increased by rights and/or acquisition issues. §USM stock.

Boardroom reshuffle at JA Devenish

By Philip Rawstorne

JA Devenish, the west country pub retailer, yesterday announced a series of board changes following its successful defence against a £128m takeover bid by Boddington, the pubs, drinks whole saling, and health care group.

Mr Michael Cannon will continue as executive chairman, concentrating on the long-term development of the company, but his role as chief executive will go to Mr John Clark, deputy chairman.

Two new non-executive directors have been appointed: Dr Anthony Button, former chairman of Watney Combe Reid, Truman, and Ushers Brewery and until recently a non-executive member of Grand Metropolitan Brewery; and Mr David Hardy, chairman of MGM Assurance and of London Docklands Development, and previously executive chairman of Globe Investment Trust.

Devenish, which quit brewing during the takeover battle and is now concentrating on pub retailing, also announced the acquisition of seven pubs from Whitbread for £1.8m.

The pubs are located in areas such as Tewkesbury, Exeter, Bournemouth and Northampton, in which Devenish aims to expand its managed estate.

Its total estate now comprises 375 pubs and it is negotiating further acquisitions.

Dinkie Heel disposal

Dinkie Heel, engaged in the footwear industry, has sold the trading assets of Enterprise Group to Charles Birch for about £525,000.

Anglesey Mining moves to finance development

ANGLESEY MINING yesterday said it was closer to getting financing for Phase II of its development of the Parys Mountain mine in North Wales.

In its report and accounts for the year to March 31 1991, heavily qualified by auditors Coopers & Lybrand Deloitte, the company claimed it had received conditional offers for a loan from two European banks, which would provide a significant proportion of the finance required.

Also, it had received a conditional offer of assistance from the Welsh Office Industry Department to support the development, which would create 147 jobs.

Discussions were continuing with corporate and financial advisers, aimed at optimising the funding package which would bring the mine into production as planned by 1993.

In their qualification Coopers & Lybrand said the accounts were prepared on a going concern basis. They could not be satisfied that adequate finance would be obtained and, therefore, were unable to form an opinion as to whether the financial statements gave a true and fair view of the state of the company's affairs.

Also, there was uncertainty as to the recoverability of the development and exploration expenditure included in the balance sheet at £8.57m.

The company said Phase I was completed in 1990-91. A feasibility study confirmed the project was viable. During pilot plant testing over 2,000 tonnes of ore were processed at the mine and some 250 tonnes of metal concentrates were sold to the Pasminco smelter.

BOARD MEETINGS

TODAY

Interims- Alexandra Workwear, Anglo American Investment Trust, Children's Medical Charity, Freeman, Johnston Group, Lawrence (Walter), London & Manchester, NMW Computers, OS, S&U Stores, Time Products, Walker Greenbank.

Finals- BM, Barry Wehmiller Intl, Manchester United, Pegasus.

FUTURE DATES

Interims-	
Cohen (A)	Oct. 11
Derwent Valley	Oct. 31
Desflex	Oct. 14
Essex Water	Oct. 16
Robinson (T)	Oct. 11
Suffolk Water	Oct. 16
Unigate	Nov. 27
Finals-	
Attwoods	Oct. 23
Edinburgh Inv Trust	Oct. 22
Gleeson (MJ)	Nov. 14
Needler	Oct. 10
New Frontiers Dev	Oct. 25
Prestwick	Oct. 14
Tay Homes	Oct. 14
UDO	Oct. 22

Prices for electricity determined for the purposes of the electricity pooling and settlement arrangements in England and Wales.

1/2 hour period ending	Pool purchase price £/MWh (Provisional Prices for Trading on 07.10.91)	Pool purchase price £/MWh (Final Prices for Trading on 03.10.91)	Pool selling price £/MWh (Final Prices for Trading on 03.10.91)
0030	15.86	16.19	16.19
0100	15.65	16.11	16.11
[illegible]	[illegible]	[illegible]	[illegible]

Prices for electricity determined for the purposes of the electricity pooling and settlement arrangements in England and Wales.

1/2 hour period ending	Pool purchase price £/MWh (Provisional Prices for Trading on 08.10.91)	Pool purchase price £/MWh (Final Prices for Trading on 10.09.91)	Pool selling price £/MWh (Final Prices for Trading on 10.09.91)
0030	15.84	16.31	16.31
0100	15.84	16.19	16.19
[illegible]	[illegible]	[illegible]	[illegible]

Prices for electricity determined for the purposes of the electricity pooling and settlement arrangements in England and Wales.

1/2 hour period ending	Pool purchase price £/MWh (Provisional Prices for Trading)	Pool purchase price £/MWh (Final Prices for Trading)	Pool selling price £/MWh (Final Prices for Trading)
0030	15.91	16.27	16.27
[illegible]	[illegible]	[illegible]	[illegible]

COMMODITIES AND AGRICULTURE

Mulroney offers financial aid to grain farmers

By Bernard Simon in Toronto

CANADA'S prime minister, Mr Brian Mulroney, has responded to growing militancy among hard-pressed prairie grain farmers by promising them another financial aid package.

Despite fiscal constraints, Mr Mulroney said the government would make a "major" announcement soon to cushion farmers against the slump in world grain prices.

Observers in Winnipeg expect the payout to approach C$1.3bn, the figure which a committee of farm and government representatives last week estimated as the loss suffered by farmers in the season which ended on July 31.

Canada is the world's third biggest wheat exporter after the US and European Community, and regards itself as one of the main victims of the international grain subsidy war. The Canadian Wheat Board is paying farmers an initial price of only C$95 a tonne this season, down from C$135 last year.

In a further sign of impatience, Canada's agriculture minister Mr William McKnight last week threatened unspecified retaliatory steps against the EC if progress was not made by the end of the year towards ending the subsidy war.

Thousands of farmers have vented their frustration at rallies over the past three weeks in rural Manitoba and Saskatchewan. A rally to be held in Winnipeg tomorrow is expected to be one of the biggest in Canadian farm history.

Mr Greg Arason, chief executive of Manitoba Pool Elevators, said yesterday that the rallies "have raised the profile of the issue and brought the farmers together on a non-partisan basis."

Manitoba Pool will close all its elevators for a few hours tomorrow, and the company placed advertisements in prairie newspapers yesterday explaining the farmers' case to the public.

The Organisation for Economic Co-operation and Development estimated earlier this year that Canadian farmers received a total of C$7.5bn in subsidies in 1990, up from an annual average of C$5.4bn between 1979-86. The bulk of the payments go to grain producers.

Even without the forthcoming aid package, subsidies are likely to rise substantially this year. Ottawa unveiled two new safety net programmes last January which will provide an estimated C$3bn to grain and oilseeds producers in 1991/92.

Indonesia authorises rice imports as drought bites

By Claire Bolderson in Jakarta

PRESIDENT Suharto of Indonesia has approved plans to import rice to boost stocks while the country is in the grip of a severe drought.

Indonesia was once the world's biggest rice importer but has claimed self-sufficiency in its staple food since 1984. Rice self-sufficiency is often hailed as one of the most significant achievements of President Suharto's government and the decision to announce possible imports is a politically sensitive one.

Press reports yesterday quoted Mr Sukriya Atmadja, vice-chairman of the National Logistics Agency (Bulog), which oversees stocks of rice and other major commodities, as saying that the president gave the go-ahead for rice imports at a meeting with military commanders "recently". "Details of the quantity of the imports and when the imports will be done are not available" Mr Sukriya said.

Western observers based in Jakarta predict that Indonesia will need to import about 200,000 tonnes of rice by the end of this year and a possible further 300,000 tonnes in early 1992.

However, they say that Indonesia has probably already made some purchases because, given price sensitivities, news of the president's approval for imports would not have been released without some rice having been bought first.

Bulog currently holds rice stocks of just less than 1.4m tonnes but production of unhusked rice in Indonesia this year is expected to drop by 1.07 per cent to 44.7m tonnes because of the prolonged drought.

Officials said recently that some 240,000 hectares of rice fields had been affected by the lack of rain and that so far the harvest had been ruined in about 30,000 hectares.

Water levels in major irrigation dams are very low and the onset of the rainy season is expected to be later than usual this year. Observers say that could affect the November planting season on the island of Java, the centre of Indonesia's rice production.

New World screwworm eradicated in Libya

By David Blackwell

THE NEW World screwworm fly, which was first found in Libya in 1988, has been exterminated in the North African country thus averting a potential catastrophe for livestock, wildlife and humans.

Dr Patrick Cunningham of the UN Food and Agricultural Organisation said in Washington yesterday: "If the screwworm had not been eradicated swiftly from Libya, it would have spread throughout Africa, into the Middle East, Southern Europe and eventually to Asia. The damage to domestic animals, wildlife and even man would have been incalculable."

The female fly lays about 400 eggs in open wounds as small as a tick bite. The larvae eat the living flesh of the host animal and can kill full-grown cattle in a few days.

The FAO killed off the Libyan infestation through the sterile fly technique in a programme costing only half the $100m outlay projected.

For the last six months 40m sterilised male flies a week have been dropped by air over the infested area.

Last year more than 12,000 infested animals were found in Libya. But no new cases have been reported since April.

The sterile flies have been imported from Mexico, where screwworm was the major livestock problem until it was successfully eradicated earlier this year after a $750m programme.

Low Soviet gold estimates 'credible'

ESTIMATES of total Soviet gold reserves of less than 1,000 tonnes are credible, the World Gold Council, a producer-financed organisation, said yesterday, Reuter reports in London.

Gold prices rallied last week on remarks by a senior Soviet official that put the union's gold reserves well below most previous Western estimates.

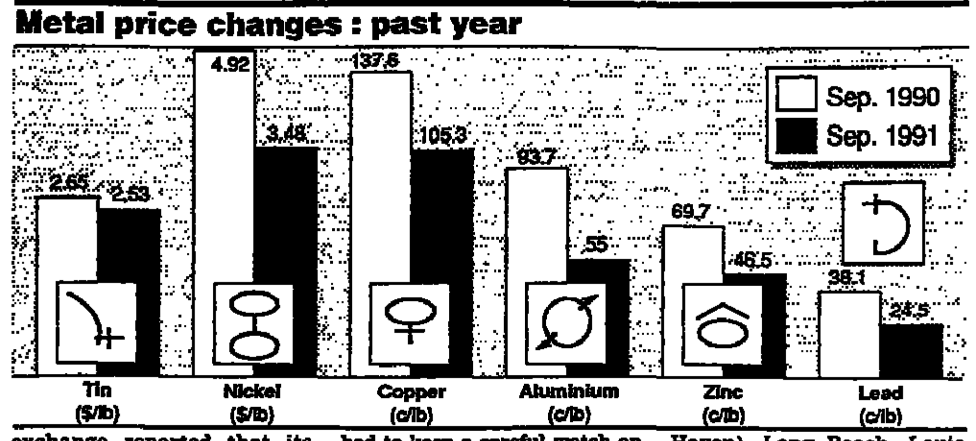
Mr David Gulley, head of the WGC's investment division, said an estimate by a Western source close to the Soviets that total reserves – including financial and trading stocks and outstanding swaps – totalled under 1,000 tonnes could be correct.

The total could be near the 720-tonne level of gold reserves reached by adding the finance ministry holdings of 240 tonnes, Gosbank's (the state bank) 374.50 tonnes and outstanding gold swaps of 110 tonnes referred to in recent Soviet statements, Mr Gulley said.

Metal traders start their mating season

Kenneth Gooding looks at the evolution of the LME at a time of falling prices

Metal price changes : past year



Metals producers, consumers, traders and merchants – more than 3,500 of them – have converged on London this week to celebrate the start of the mating season (the endearing term they use to describe the industry's contract negotiations) and to pay their respects to the most international market in the world: the London Metal Exchange.

Hate it (as many producers and consumers do with a vengeance) or love it, the LME plays a vital role in their lives. At least half of all contracts for the six metals traded on the exchange are related directly to the prices reached by its 17 ring dealing members who shout themselves nearly hoarse in open-outcry trading sessions several times each working day.

There is scarcely a contract signed which does not refer to the LME price in some way, however obliquely. Its prices are posted on the notice boards of mines the world over because miners' bonuses are frequently tied to them.

This year the news for the miners – and producers – has not been good. Since last year's "metals week" in London prices have fallen by between 4.5 per cent (tin, which was already very low last year) and 35.5 per cent (lead). Consumers, therefore, go into the mating season negotiations holding all the best cards. But they are far from cheerful because the recession which has been responsible for the low prices has made their lives difficult.

Yet, in spite of all the gloom, the LME has just completed its most eventful year since the dark days of the tin crisis, when many of its members nearly went bankrupt, and today is stronger than ever.

Trading volumes, which rose by 32 per cent to record levels last year, were expected to consolidate in recessionary 1991. However, they continue to grow and have bounded ahead by another 30 per cent so far this year.

The company which runs the exchange reported that its gross income nearly doubled, from £2.4m in 1989 to £4.3m last year while taxable profit jumped from £29,761 to £1.07m. This meant a great deal more tax was paid, £414,124 against £51,209, but it did leave retained profits almost exactly in line with those which are required by the UK financial regulatory system – enough to cover about six months operational costs.

Mr David King, the exchange's chief executive, who was paid £112,810 last year, believes the LME's growing success stems from its recent policy of taking its message out to clients and talking to them about their concerns. He and his executive team have been moving around the world explaining the role of the LME – which is to provide a hedging facility and to provide clients with a means of taking delivery of physical metal: copper, aluminium, nickel, lead, zinc and tin.

That is not to say LME representatives get a warm welcome everywhere they go. Many in the metals business, producers in particular, resent the exchange taking over what they see as their rightful role of setting prices. They abhor the price volatility which is part and parcel of the market.

They are disgusted by the games traders play for their own profit and which sometimes result in severe distortions of the market. In the past year the LME executive has had to keep a careful watch on nasty squeezes that developed at different times in its copper, zinc and nickel markets.

Mr King acknowledges that, "like marriage or the examination system, the LME isn't perfect. But he says: "It's the best we've got. The open outcry system is the most transparent method of arriving at true prices."

For 99.9 per cent of the time the LME markets are being driven by the fundamentals of supply and demand, he insists. A recent study by the World Bank suggested that the LME had the most efficient pricing system.

According to Mr King, most LME participants are well aware that "if people try to abuse the market for short-term gain, everyone will lose because it will drive clients away from the exchange." Mr King and his team have been taking action to ensure that the rogues have very little room left to "apply undue influence and cause short-term aberrations in prices."

Fistly, the LME has been rapidly expanding its warehouse system. By the end of this year there will be well over 1m tonnes of metal worth more than $2bn located in 180 sheds in 63 countries. An important gap has been filled since February when the first LME warehouses were approved in the US.

By the end of the year they will be available in Chicago, Toledo, Bridgeport (New Haven), Long Beach, Louisville, St Louis and Baltimore for all metals but copper. Copper is excluded because the LME does not want to take the chance of damaging the New York Commodity Exchange's (Comex) successful copper contract.

The warehouse expansion "shows the exchange's capacity to enable international producers and consumers to make or take delivery of metal in locations appropriate to their needs. The warehouse system enables metal to be delivered rapidly to defuse price 'spikes'" says Mr King.

The LME executive has also improved its monitoring of the market and has done some stern talking behind the scenes when it felt traders were overstepping the mark. Next month a formal system of "large position" reporting will begin. Traders will be required to report to the LME daily any futures and options positions held for their own or their clients' accounts that exceed certain limits.

Mr King says the system should not be too burdensome for traders and should give the exchange a better understanding of what is going on in the market. "It is in line with our statutory obligation to maintain an orderly market and shows our determination to keep the market orderly while sticking to our fundamental principal of not interfering with free market forces."

He also hastens to dispel the idea that LME traders have benefited unduly from the strong growth in the exchange's business. Their income is mainly based on commission income, in turn based on metals prices. Plummeting metals prices over the past two years have cut into trader's profitability, Mr King points out.

Some ring dealing members have left the exchange because profits have been so hard to come by. However, Mr King says the fall in ring-dealing members, from 27 in 1986 to 17 today, results mainly from the introduction of new types of associate broker members who do not sit in the ring. This has taken to 40 the number of LME members who can serve clients' hedging needs.

There have been other changes among the members. Most member companies are now owned by large metals groups or big financial institutions and as a group their financial health has never been stronger. To give additional comfort to clients, the LME in the past year doubled the amount of net worth required of each member.

Anyone involved in this week's celebrations will quickly become aware, from the variety of languages and dialects to be heard, of the LME's international nature.

About 75 per cent of its member companies are owned by non-UK parents. More than 95 per cent of its business comes from overseas – Japan accounts for about 20 per cent, the US 15 to 20 per cent and Europe most of the rest, with Germany, France and Belgium to the fore. There are 380 authorised brands of the six traded metals drawn from 63 countries.

Consequently, the LME contributes a healthy £100m to the UK's invisible earnings. Mr King says there is more to come. In particular, the LME expects to drum up lots of new business in the US as more warehouses are established and more people become aware of what the exchange has to offer.

New aluminium contract unlikely before mid-1992

By Kenneth Gooding, Mining Correspondent

THE CHANCES of the London Metal Exchange introducing its proposed secondary aluminium contract were no better than 50-50, some LME members suggested yesterday.

The exchange hoped to announce its decision about the contract this month but needs much more time in the light of the difficulties and the substantial opposition it has encountered.

At an LME seminar yesterday, Mr Martin Abbott, director of marketing, said the exchange was unlikely to be in a position to make a decision about the contract until the middle of next year.

While most issues had been settled, he said difficulties about storing secondary aluminium ingots had still to be dealt with. This aluminium deteriorates over time as dampness and temperature changes cause it to oxidise. Mr Abbott insisted that a solution would be found. For example, a "first in, first out" system of storage was being studied, as was a a certification scheme similar to that used for perishable soft commodities.

Opponents of the secondary aluminium contract said that this would involve substantial and unwarranted changes in the operation of LME-approved warehouses.

Mr Abbott revealed that, if a contract is introduced, it would almost certainly be based on the German DIN 266 standard and the Japanese ADC 12 ingot. However, other grades, notably US 380 alloy, had not been entirely ruled out. The contract would be traded in 20-tonne lots over 15 months and in US dollars a tonne.

Mr Andy Smith, sales director of Cookson Aluminium, told the seminar that 70 per cent of secondary aluminium was used by the motor industry and the percentage would increase as more of the metal was designed into future vehicles.

Renault and Peugeot, the French vehicle groups, recently had taken the initiative and told suppliers what they were willing to pay for secondary aluminium for the whole of 1992. Without a secondary aluminium contract the producers could only refuse to supply the metal, losing their market; supply the metal without cover, thereby gambling their businesses; or attempt an imperfect hedge on the LME's primary aluminium contract.

The problem of storing secondary metal was not insurmountable: in dry conditions it could be kept for a year without trouble.

The industry as a whole should welcome the prospect of a secondary aluminium contract, he said.

WORLD COMMODITIES PRICES

MARKET REPORT

Gold closed on the London bullion market close to $360 a troy ounce – but was unable to break through resistance there. Dealers said trading was probably too thin for a convincing rally on the upside. On the LME nickel edged ahead with market sentiment supported by news that French producer Eramet is to close one of the three furnaces at its Doniambo, New Caledonia, smelter for six months in 1992. Production losses will be significant, the company said. Aluminium staged a technical bounce in the afternoon, recovering most of the morning losses. Traders noted that active options business on Friday included over 2,300 lots of November puts. LME aluminium stocks are expected to rise by another 10,000 to 20,000 tonnes today. Copper prices were easier in the absence of significant news from Zaire and Highland Valley. Subdued conditions also reflected many participants worldwide attending tonight's annual LME dinner in London. In Chicago soyabeans were well down at midday in spite of high credit allocations for Soviet purchases. "The inability of the market to rise on friendly news is disappointing to say the least," said one floor trader.

Compiled from Reuters

London Markets

SPOT MARKETS		
Crude oil (per barrel FOB)		+ or -
Dubai	$18.55-8.60z	+0.30
Brent Blend (dated)	$21.90-2.00	+.175
Brent Blend (Nov)	$21.60-1.70	+0.20
W.T.I. (1 pm est)	$22.90-3.00z	+.275
Oil products (NWE prompt delivery per tonne CIF)		+ or -
Premium Gasoline	$234-236	
Gas Oil	$214-216	+4.5
Heavy Fuel Oil	$75-77	-0.5
Naphtha	$219-223	+3
Petroleum Argus Estimates		
Other		+ or -
Gold (per troy oz)♣	$359.6	+3.6
Silver (per troy oz)♣	414.0c	-3.25
Platinum (per troy oz)	$357.8	-0.2
Palladium (per troy oz)	$84.1	-0.4
Copper (US Producer)	112.0c	
Lead (US Producer)	38.0c	+1.0
Tin (Kuala Lumpur market)	14.85r	-0.01
Tin (New York)	258.0c	
Zinc (US Prime Western)	62.0c	
Cattle (live weight)†	102.36p	-1.29*
Sheep (dead weight)†	111.57p	-0.62*
Pigs (live weight)†	75.95p	-2.12*
London daily sugar (raw)	$232.6j	+1.0
London daily sugar (white)	$266.2j	+0.9
Tate and Lyle export price	£242.5	+2.0
Barley (English feed)	Unq.	
Maize (US No. 3 yellow)	£141u	
Wheat (US Dark Northern)	£101u	
Rubber (Nov)♥	53.00p	+0.25
Rubber (Dec)♥	53.50p	+0.25
Rubber (KL RSS No 1 Nov)	224.5m	
Coconut oil (Philippines)§	Unq.	
Palm Oil (Malaysian)§	$342.5z	
Copra (Philippines)§	$310j	+5
Soyabeans (US)	£156u	
Cotton "A" Index	69.90c	-0.35
Wooltops (64s Super)	335p	-5

£ a tonne unless otherwise stated. p-pence/kg. c-cents/lb. r-ringgit/kg. q-Oct/Dec t-Sep/Dec u-Oct x-Sep/Oct y-Aug/Sep z-Nov j-Oct/Nov. †Meat Commission average fatstock prices. * change from a week ago. ♥London physical market. §CIF Rotterdam. ♣ Bullion market close. m-Malaysian cents/kg.

SUGAR – London FOX			($ per tonne)	
Raw	Close	Previous	High/Low	
Dec	-	183.00	180.00	
Mar	187.40	185.80	188.00	185.40
May	186.00	184.80	186.00	183.60
Aug	190.00	188.80	189.00	
Oct	194.00		185.60	
White	Close	Previous	High/Low	
Dec	283.3	281.5	282.5	281.0
Mar	282.0	280.0	281.6	280.0
May	280.5	279.0	280.0	278.3
Aug	281.5	279.8	280.6	
Oct	263.0	261.0	260.5	

Turnover: Raw 110 (304) lots of 50 tonnes. White 1161 (741)
Paris- White (FFr per tonne): N/A

CRUDE OIL – IPE			$/barrel	
	Latest	Previous	High/Low	
Nov	21.63	21.44	21.69	21.29
Dec	21.40	21.20	21.46	21.10
Jan	21.16	20.96	21.20	21.05
Mar	20.66	20.36	20.66	20.60
Apr	20.46	20.70	20.46	
IPE Index	21.45	21.39	21.45	

Turnover 13662 (17551)

GAS OIL – IPE			$/tonne	
	Close	Previous	High/Low	
Oct	210.75	207.00	210.75	206.25
Nov	211.75	208.75	212.00	207.50
Dec	212.25	210.00	212.25	208.25
Jan	210.25	208.00	210.25	207.00
Feb	203.50	202.50	204.00	201.75
Mar	196.00	194.50	196.75	194.00
Apr	190.00	187.50	190.00	188.50
Jun	180.00	179.00	180.00	

Turnover 13811 (16836) lots of 100 tonnes

TEA

There were 21,745 packages for the day, reports the Tea Brokers' Association. Landed new season's Assams met more general demand with better mediums and quality teas a strong feature at firm to dearer prices. Bright liquoring east Africans met improved demand and often advanced by 3-5p, while plain sorts were easier by 1-3p. The limited offerings of Ceylons attracted selective enquiry with a few brighter teas selling readily. Offshore teas met good demand at fully firm rates. The highest price realised this week was 251p for an Assam pf. Quotations: quality 200p, medium 115p, low medium 73p:

COCOA – London FOX			£/tonne	
	Close	Previous	High/Low	
Dec	789	785	789	773
Mar	829	820	830	812
May	848	840	849	835
Jul	870	861	869	856
Sep	890	882	881	878
Dec	912	904	911	900
Mar	937	928	927	
May	956	947	947	

Turnover: 3231 (10086) lots of 10 tonnes
ICCO indicator prices (SDRs per tonne). Daily price for Oct. 4 987.74 (982.73) 10 day average for Oct. 7 954.11 (952.27)

COFFEE – London FOX			£/tonne	
	Close	Previous	High/Low	
Nov	484	492	491	477
Jan	507	516	511	502
Mar	526	535	526	522

Turnover: 1625 (1715) lots of 5 tonnes
ICO indicator prices (US cents per pound) for Oct. 4 : Comp. daily 60.88 (60.67) 15 day average 64.80 (65.30)

POTATOES – London FOX			£/tonne	
	Close	Previous	High/Low	
Nov	89.5		87.0	
Apr	128.5	128.6	128.4	126.5
May	147.0		147.0	

Turnover 92 (105) lots of 20 tonnes.

SOYAMEAL – London FOX			£/tonne
	Close	Previous	High/Low
Dec	136.00	136.00	136.00

Turnover 10 (202) lots of 20 tonnes.

FREIGHT – London FOX			$10/index point	
	Close	Previous	High/Low	
Oct	1670	1675	1674	1670
Nov	1730	1730	1730	1729
Dec	1730	1725	1730	1716
Jan	1733	1733	1740	1733
BFI	1558	1581	1568	

Turnover 67 (392)

GRAINS – London FOX			£/tonne	
Wheat	Close	Previous	High/Low	
Nov	117.65	117.50	117.65	117.50
Jan	121.25	121.10	121.35	121.20
Mar	124.25	124.00	124.25	124.20
Barley	Close	Previous	High/Low	
Nov	113.20	113.00	113.35	113.20
Jan	117.20	117.25	117.25	117.20

Turnover: Wheat 298 (833), Barley 43 (25).
Turnover lots of 100 tonnes.

PIGS – London FOX		(Cash Settlement) p/kg	
	Close	Previous	High/Low
Nov	103.5	104.0	103.0
Jan	99.0		99.0

Turnover:10 (36) lots of 3,250 kg

MGMI – London FOX					
	Close	Prev.	High	Low	Vol
Indx	132.33	133.61			
Jun	134.50		134.50		30
Sep	135.40		135.40		20

LONDON METAL EXCHANGE			(Prices supplied by Amalgamated Metal Trading)			
	Close	Previous	High/Low	AM Official	Kerb close	Open interest
Aluminium, 99.7% purity ($ per tonne)						Total daily turnover - lots
Cash	1115-6	1117-18		1107-8		
3 months	1143-4	1144-45	1146/1138	1136-7	1148-9	116,594 lots
Copper, Grade A (£ per tonne)						Total daily turnover - lots
Cash	1345-6	1352-53	1338/1332	1351-2		
3 months	1339-40	1342-43	1346/1336	1344-4.5	1336-7	110,034 lots
Lead (£ per tonne)						Total daily turnover - lots
Cash	306.5-7.5	307.5-8.5	307.25/307	307.25-7.5		
3 months	316-6.5	316.5-7.0	317.25/316	316.5-7	316.5-7	12,766 lots
Nickel ($ per tonne)						Total daily turnover - lots
Cash	7490-500	7460-70		7450-60		
3 months	7540-5	7500-10	7550/7490	7495-500	7550-60	16,915 lots
Tin ($ per tonne)						Total daily turnover - lots
Cash	5520-30	5530-35	5535	5530-5		
3 months	5580-5	5600-05	5601/5580	5600-1	5595-600	5,465 lots
Zinc, Special High Grade ($ per tonne)						Total daily turnover - lots
Cash	986-8	994-5	995/994	994-5		
3 months	1013-4	1011-12	1014/1011	1011-2	1014-5	27,837 lots

LME Closing £/$ rate: SPOT: 1.7355 3 months: 1.7150 6 months: 1.6954 9 months: 1.6789

LONDON BULLION MARKET (Prices supplied by N.M.Rothschild)		
Gold (fine oz)	$ price	£ equivalent
Close	359.40-359.80	
Opening	358.80-359.30	
Morning fix	359.20	206.793
Afternoon fix	359.70	207.141
Day's high	360.20-360.60	
Day's low	357.70-358.00	

Loco Ldn Mean Gold Lending Rates (Vs US$)			
1 month	4.76	6 months	4.65
2 months	4.71	12 months	4.60
3 months	4.71		

Silver fix	p/fine oz	US cts equiv
Spot	237.60	413.00
3 months	243.65	418.45
6 months	249.60	424.15
12 months	261.65	436.10

GOLD COINS (Prices supplied by Engelhard Metals)		
	$ price	£ equivalent
Krugerrand	359.75-360.75	207.10-207.60
Maple leaf	369.75-370.75	213.00-213.50
New Sovereign	87.75-88.25	50.50-51.00

TRADED OPTIONS				
Aluminium (99.7%)	Calls		Puts	
Strike price $ tonne	Dec	Mar	Dec	Mar
1050	92	126	6	12
1150	27	61	40	43
1250	4	23	116	103
Copper (Grade A)	Calls		Puts	
2200	120	123	60	19
2300	71	60	109	58
2400	39	24	173	118
Coffee	Nov	Jan	Nov	Jan
450	34	62		5
500	2	27	18	20
550		10	66	53
Cocoa	Dec	Mar	Dec	Mar
775	41	97	27	33
800	29	72	40	43
825	21	59	57	55
Brent Crude	Nov	Dec	Nov	Dec
2100	56	62	9	46
2150	21	43	20	
2200		25		

New York

GOLD 100 troy oz.; $/troy oz.				
	Close	Previous	High/Low	
Oct	359.3	359.0	360.0	359.5
Nov	360.4	360.1	0	0
Dec	362.0	361.7	363.4	360.5
Feb	364.7	364.5	365.8	363.8
Apr	367.4	367.2	369.0	366.7
Jun	370.2	3370.0	371.3	370.2

PLATINUM 50 troy oz; $/troy oz.				
	Close	Previous	High/Low	
Oct	359.4	359.1	359.5	358.0
Jan	362.1	362.1	362.5	360.0
Apr	365.8	365.0	365.5	364.5
Jul	369.7	369.7	0	0
Oct	377.0	377.0	0	0

SILVER 5,000 troy oz; cents/troy oz.				
	Close	Previous	High/Low	
Oct	411.1	413.2	0	0
Nov	412.6	414.6	0	0
Dec	414.6	417.0	416.5	412.0
Jan	416.9	419.1	418.5	418.5
Mar	421.3	423.6	422.0	419.0
May	425.7	427.9	425.0	424.0
Jul	429.7	431.9	0	0
Sep	434.0	436.3	0	0
Dec	440.7	443.0	440.0	440.0
Jan	443.3	445.6	0	0

HIGH GRADE COPPER 25,000 lbs; cents/lbs				
	Close	Previous	High/Low	
Oct	106.05	107.55	107.10	106.00
Nov	104.70	106.35	105.80	104.65
Dec	103.55	105.10	104.70	103.40
Jan	102.65	104.00	103.55	103.40
Feb	102.00	103.35	0	0
Mar	101.35	102.70	102.40	101.30
Apr	100.95	102.15	0	0
May	100.45	101.60	0	0
Jun	100.10	101.20	0	0
Jul	99.75	100.80	100.10	100.10

CRUDE OIL (Light) 42,000 US galls $/barrel				
	Latest	Previous	High/Low	
Nov	22.91	22.61	22.99	22.53
Dec	22.76	22.47	22.83	22.40
Jan	22.53	22.30	22.60	22.24
Feb	22.30	22.09	22.37	22.04
Mar	22.05	21.86	22.09	21.80
Apr	21.78	21.63	21.84	21.57
Jun	21.42	21.30	21.48	21.26
Jul	21.28	21.18	21.30	21.23
Aug	21.24	21.08	21.24	21.08

HEATING OIL 42,000 US galls, cents/US galls				
	Latest	Previous	High/Low	
Nov	6660	6558	6690	6535
Jan	6805	6720	6835	6695
Mar	6385	6292	6390	6280
Apr	6090	6037	6090	6035
Jun	5780	5765	5760	5760
Aug	5795	5785	5795	5750

COCOA 10 tonnes;$/tonnes				
	Close	Previous	High/Low	
Dec	1262	1261	1287	1275
Mar	1335	1335	1339	1330
May	1367	1368	1370	1364
Jul	1395	1393	1396	1392
Sep	1419	1420	0	0
Dec	1459	1455	0	0
Mar	1494	1490	0	0
May	1519	1515	0	0
Jul	1544	1540	0	0

COFFEE "C" 37,500lbs; cents/lbs				
	Close	Previous	High/Low	
Dec	80.30	79.60	80.40	78.90
Mar	83.80	83.30	83.95	82.95
May	86.15	85.75	86.35	85.40
Jul	88.40	88.60	88.40	88.00
Sep	91.35	91.00	90.70	90.50
Dec	95.05	94.80	94.50	93.90
Mar	98.00	97.75	0	0

SUGAR WORLD "11" 112,000 lbs; cents/lbs				
	Close	Previous	High/Low	
Mar	8.75	8.66	8.78	8.65
May	8.65	8.59	8.66	8.59
Jul	8.62	8.53	8.64	8.53
Oct	8.59	8.50	8.61	8.54
Mar	8.53	8.44	0	0

COTTON 50,000; cents/lbs				
	Close	Previous	High/Low	
Oct	62.75	67.35	62.00	62.00
Dec	64.42	67.87	65.00	64.35
Mar	66.18	68.60	66.80	66.17
May	66.51	66.60	67.30	66.51
Jul	67.52	66.20	68.10	67.45
Oct	65.90	67.35	68.40	65.75
Dec	65.55			65.65
65.50				

ORANGE JUICE 15,000 lbs; cents/lbs				
	Close	Previous	High/Low	
Nov	129.80	124.80	130.00	125.25
Jan	128.95	124.35	129.20	124.50
Mar	129.75	125.30	129.75	125.50
May	130.90	125.90	130.90	126.90
Jul	130.85	125.90	130.00	126.00
Sep	130.85	125.90	0	0
Nov	130.85	125.90	0	0
Jan	130.85	125.80	0	0
Mar	130.85	125.90	0	0

INDICES				
REUTERS (Base: September 18 1931 = 100)				
	Oct 7	Oct 4	mnth ago	yr ago
	1603.1	1600.7	1665.1	1744.1
DOW JONES (Base: Dec. 31 1974 = 100)				
	Oct 4	Oct 3	mnth ago	yr ago
Spot	115.39	116.14	117.51	128.76
Futures	123.55	123.89	123.48	130.60

Chicago

SOYABEANS 5,000 bu min; cents/60lb bushel				
	Close	Previous	High/Low	
Nov	578/4	581/6	581/0	575/0
Jan	587/2	593/2	592/4	586/4
Mar	597/4	602/6	603/0	597/0
May	605/4	611/4	610/4	604/4
Jul	611/2	617/4	617/0	610/4
Aug	610/0	615/4	614/0	610/0
Sep	594/2	598/0	599/0	594/0

SOYABEAN OIL 60,000 lbs; cents/lb				
	Close	Previous	High/Low	
Oct	19.59	19.88	19.88	19.53
Dec	19.93	20.17	20.17	19.83
Jan	20.12	20.37	20.30	20.03
Mar	20.40	20.67	20.63	20.37
May	20.65	20.92	20.92	20.65
Jul	21.01	21.31	21.20	21.01
Aug	21.25	21.44	21.25	21.25
Sep	21.30	21.70	21.40	21.30

SOYABEAN MEAL 100 tons; $/ton				
	Close	Previous	High/Low	
Oct	190.6	191.1	191.4	189.3
Dec	188.6	189.2	189.5	187.6
Jan	186.5	187.3	187.7	186.1
Mar	184.8	185.2	185.8	184.7
May	182.8	183.4	183.5	182.5
Jul	182.0	182.5	183.2	182.0
Aug	181.5	181.5	182.7	181.5
Sep	180.2	181.0	181.0	180.0

MAIZE 5,000 bu min; cents/56lb bushel				
	Close	Previous	High/Low	
Dec	252/2	253/6	252/6	249/6
Mar	260/2	261/6	261/0	258/4
May	266/0	267/0	266/4	264/0
Jul	268/6	269/6	269/4	267/4
Sep	259/2	258/4	259/2	258/0
Dec	255/2	254/2	259/2	253/2

WHEAT 5,000 bu min; cents/60lb-bushel				
	Close	Previous	High/Low	
Dec	346/2	344/0	349/0	341/4
Mar	347/4	346/4	351/4	344/4
May	338/4	339/2	343/4	336/6
Jul	326/4	326/6	332/4	325/0
Sep	334/4	332/6	338/4	331/4

LIVE CATTLE 40,000 lbs; cents/lbs				
	Close	Previous	High/Low	
Oct	72.80	73.27	73.05	72.52
Dec	76.57	76.72	76.65	76.25
Feb	74.80	74.72	75.10	74.50
Apr	75.32	75.27	75.57	74.95
Jun	72.35	72.20	72.40	71.82
Aug	70.40	70.40	70.65	70.27

LIVE HOGS 30,000 lb; cents/lbs				
	Close	Previous	High/Low	
Oct	46.15	45.77	46.22	45.65
Dec	44.85	44.60	45.07	44.50
Feb	44.20	44.20	44.52	44.05
Apr	42.20	42.25	42.42	42.05
Jun	46.90	46.85	47.07	46.75
Jul	46.97	46.97	47.05	46.80
Aug	45.40	45.40	45.45	45.20

PORK BELLIES 40,000 lbs; cents/lb				
	Close	Previous	High/Low	
Feb	44.85	45.00	45.15	44.30
Mar	44.72	44.90	45.00	44.20
May	45.75	46.00	45.90	45.00
Jul	45.97	46.40	45.97	45.55
Aug	43.60	44.22	44.10	43.60

GILT-EDGED GIFTS FROM THE FINANCIAL TIMES

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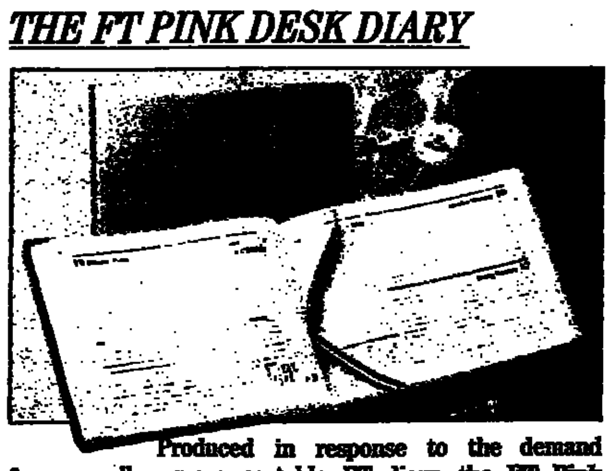

Produced in response to the demand for a smaller, more portable FT diary, the FT Pink Desk Diary with its FT-pink pages is quite unique. Its distinctive size and shape make it equally at home on a desk or in a briefcase. Although compact, it contains a wealth of business information, and its innovative page a day layout allows ample space for each day's notes and business expenses. It is covered in black *bonded leather.

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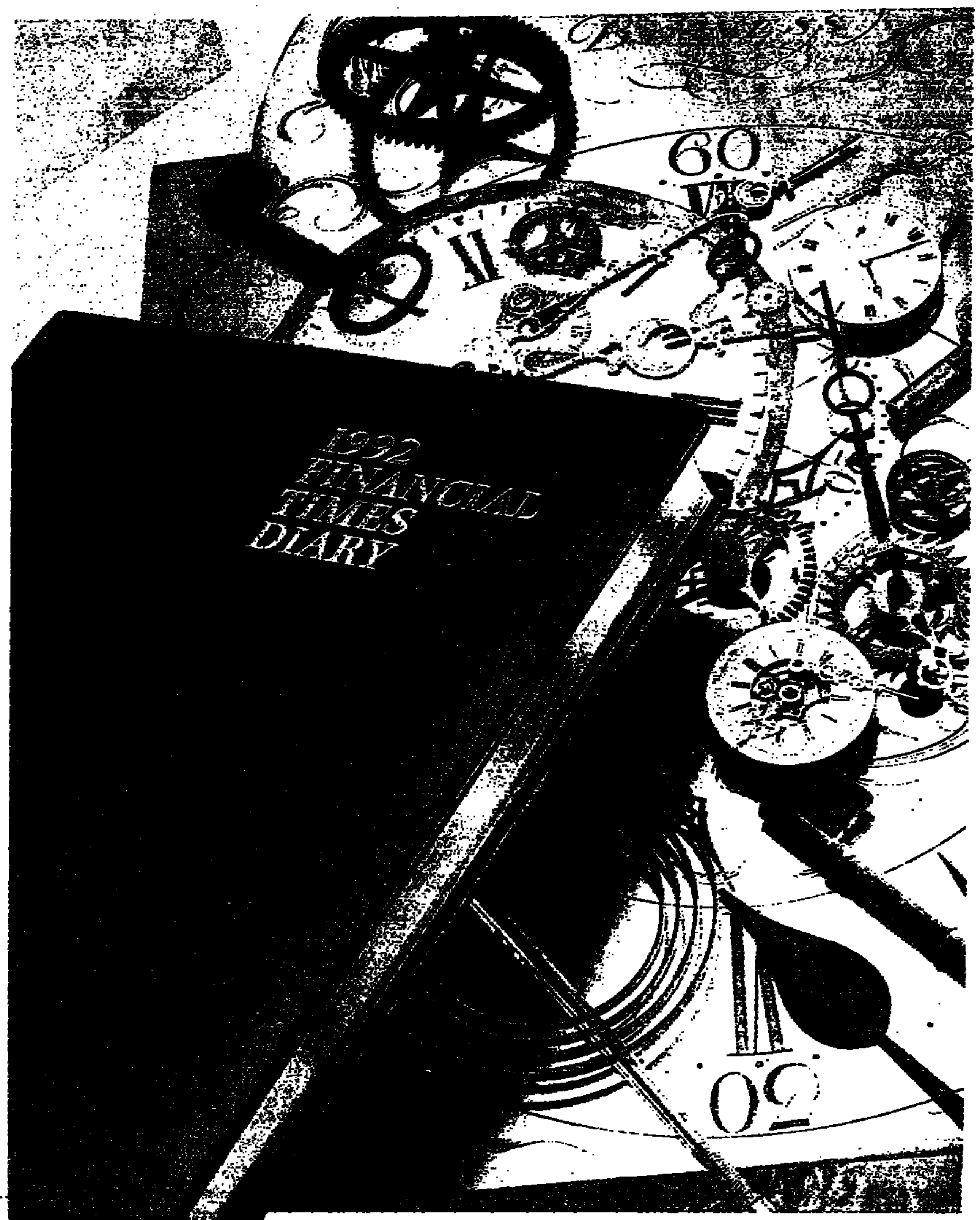

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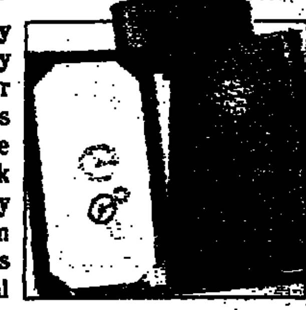
THE FT PINK POCKET DIARY

The FT Pink Pocket Diary with its unique week to view landscape format has the same information as the FT Pocket Diary and is hugely popular. It is covered in black *bonded leather.

THE FT WALLET DIARY



The FT Wallet Diary features the FT Pocket Diary bound into a black leather wallet with gilt corners. Its discreet good looks are further enhanced by a black moiré silk lining and a handy notepad. There's more than adequate space for receipts and bank notes of all denominations.

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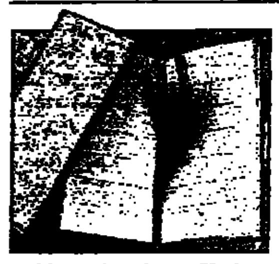
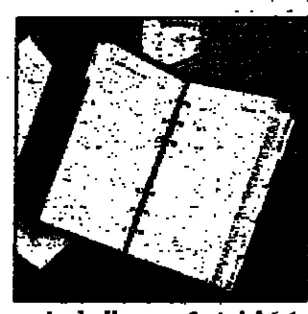


The FT Slimline Pocket Diary slips easily into your pocket.
It has a fortnight to view format and is bound in black *bonded leather with FT-pink paper and matching ribbon. The new overseas and UK information guides, London Underground, city and west end maps, make it ideal for the executive on the move.

THE FT PERSONAL ORGANISER



Beautifully produced with a black or burgundy leather cover, the FT Personal Organiser has 25mm gilt rings and ample pocket space for papers, bank notes, and credit and business cards. There are FT-pink card dividers which indicate the five fully comprehensive paper sections, including a fortnight to view Diary, Notes, Expenses, Addresses and Information (maps, UK and overseas business centres guides and other useful facts). Refill packs are available.

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THE FT COLLECTION

LONDON STOCK EXCHANGE

Shares fall sharply in thin turnover

By Terry Byland, UK Stock Market Editor

LONDON joined in the general retreat in European stock markets yesterday, which followed Wall Street's sudden turn for the worse. Selling was light in the UK market but the FT-SE Index, down 30 points at the day's low, lost the 2,600 level which was recaptured only a week ago.

Traders said that no new developments had appeared but the market had become increasingly depressed by the absence of positive factors. Hopes are fading that domestic base rates may be cut to coincide with this week's annual conference of the governing Conservative party, despite expectations that Friday will bring news of a further fall in UK headline inflation. The takeover front has quietened down, and yesterday's egm at British Aerospace passed off without incident.

Account Dealing Dates		
*First Dealings:		
Sep 30	Oct 14	Oct 28
Option Declarations:		
Oct 10	Oct 24	Nov 7
Last Dealings:		
Oct 11	Oct 25	Nov 8
Account Day:		
Oct 21	Nov 4	Nov 18

*New-time dealings may take place from 8.30 am two business days earlier.

Shares were heavily down at the opening as traders reacted to Wall Street's fall through Dow 3,000 on Friday – substantially more convincingly than on other recent challenges to this benchmark level. When Wall Street extended its loss early in the new session to approach Dow 2,950 as London closed, UK stocks renewed their setback before settling down to wait for the overnight news from the US market.

At the close, the FT-SE Index was 28.4 down at 2,596.2, just two points above the low for the day. The setback was led from the futures market for much of the session and losses ranged widely across the stock market.

The only favourable factor was the absence of sellers. Some traders suggested that hints of another rights issue had restrained the market. But yesterday's turnover was exceptionally poor. Seaq volume of 304m shares marked a return to levels last seen at the end of June when the holiday season was in full swing.

A small sell programme, in the £25m – £30m range, from a leading UK securities house had an over-proportionate effect on a market clearly lacking confidence.

Equity strategists, reviewing the developments of the past fortnight, took relatively negative stances. "Political uncertainty prolonged not cancelled," said Mr Peter Thorne at Nikko Securities, and "UK economic recovery is only promised not proven," said the strategy team at Robert Fleming Securities.

Mr Nicholas Knight at Nomura Research Institute reiterated his prediction that the market will fall to Footsie 2,400 by the year-end, perhaps as early as this month.

However, the market's belief that the UK recession is bottoming out appeared to remain firm. Equity market analysts hope to see a fall in headline inflation to 4.1 per cent (Hoare Govett), or 3.9 per cent (Yamaichi) when the UK retail price index for September is announced at the end of the week.

Also encouraging for the equity market was the disclosure last weekend that wage settlements in UK manufacturing industry have fallen to around 5.5 per cent, the lowest level for four years.

On the domestic scene, investors were discouraged by the political uncertainties posed by the success in the opinion polls of the Labour opposition party just as the conference of the Conservative party opens in Blackpool.

With little reason for optimism in the near term, the UK equity market has proved vulnerable to the signs of weakness on Wall Street.

FINANCIAL TIMES STOCK INDICES

	Oct 7	Oct 4	Oct 3	Oct 2	Oct 1	Year Ago	1991 High	1991 Low	Since Compilation High	Since Compilation Low
Government Secs	87.32	87.28	87.44	87.48	87.58	80.74	87.94 (18/9)	82.17 (2/1)	127.4 (9/1/35)	49.18 (3/1/75)
Fixed Interest	97.01	97.07	97.11	97.17	96.93	88.50	97.17 (2/10)	90.59 (2/1)	105.4 (28/11/47)	50.53 (3/1/75)
Ordinary Share●	1989.7	2018.7	2019.2	2037.9	2035.9	1705.7	2108.3 (2/9)	1608.3 (16/1)	2108.3 (2/9/91)	49.4 (26/6/40)
Gold Mines	166.6	161.2	159.9	157.2	158.9	179.3	222.8 (11/7)	127.0 (22/2)	734.7 (15/2/83)	43.5 (26/10/71)
FT-SE 100 Share	2596.2	2624.6	2625.6	2644.2	2645.6	2201.6	2679.6 (2/9)	2054.8 (16/1)	2679.6 (2/9/91)	986.9 (23/7/84)
FT-SE Eurotrack 200	1159.76	1170.14	1172.61	1178.20	1178.95	-	1198.60 (3/9)	938.62 (16/1)	1198.60 (3/9/91)	938.62 (16/1/91)
●Ord. Div. Yield	4.70	4.65	4.65	4.61	4.61	5.60				
●Earning Yld %(full)	7.48	7.41	7.42	7.38	7.36	11.73				
●P/E Ratio(Net)(☆)	16.68	16.84	16.83	16.97	16.89	10.33				
SEAQ Bargns 4.45pm	29,257	30,956	32,593	30,807	29,897	54,457				
Equity Turnover(£m)†	-	773.99	893.92	1184.49	1201.86	2028.35				
Equity Bargains†	-	31,250	32,019	30,178	28,963	49,912				
Shares Traded (ml)†	-	408.1	414.4	456.5	534.8	881.0				

Basis 100 Govt. Secs 15/10/26, Fixed Int. 1928, Ordinary 1/7/35, Gold mines 12/9/55. Basis 1000 FT-SE 100 31/12/83 & FT-SE Eurotrack 200 26/10/90. ☆ Nil 15.82

Ordinary Share Index, Hourly changes Day's High 2004.3 Day's Low 1989.5

Open	9 am	10 am	11 am	12 pm	1 pm	2 pm	3 pm	4 pm
2004.3	1996.8	1997.9	1993.6	1995.0	1998.0	1994.9	1990.5	1990.1

FT-SE 100, Hourly changes Day's High 2614.6 Day's Low 2594.2

Open	9 am	10 am	11 am	12 pm	1 pm	2 pm	3 pm	4 pm
2614.6	2604.2	2601.7	2596.1	2598.5	2602.1	2598.5	2594.9	2596.2

FT-SE Eurotrack 200, Hourly changes Day's High 1162.58 Day's Low 1158.85

Open	11 am	12 pm	1 pm	2 pm	3 pm	4 pm
1161.20	1161.21	1161.86	1162.48	1161.09	1158.85	1159.90

GILT EDGED ACTIVITY

Indices*	Oct 4	Oct 3
Gilt Edged Bargains	84.9	74.4
5–Day average	83.2	83.1

*SE Activity 1974.
†Excluding intra-market business & Overseas turnover.

London report and latest Share index: Tel. 0898 123001

TRADING VOLUME IN MAJOR STOCKS

	Volume 000's	Closing Price	Day's change		Volume 000's	Closing Price	Day's change		Volume 000's	Closing Price	Day's change		Volume 000's	Closing Price	Day's change
ADT	26	500		Cookson	156	122		Lucas	1,100	133	–3	Severn Trent Water	814	358	–5
ASDA Group	6,600	45	–4	Courtaulds	185	472	–1	MB Caradon	216	249	–4	Shell Transport	3,200	504	–½
Abbey National	484	297	–4	Dalgety	587	412	–3	MEPC	387	479	–5	Siebe	277	524	–16
Albert Fisher	2,700	98	+1	De La Rue	689	447	–1	Manweb	102	281	–7	Slough Ests	325	271	–1
Allied–Lyons	511	616	–6	Dixons	873	243		Marks & Spencer	1,400	276	–2	Smith (W.H.) A	96	409	–3
Amstrad	3,100	35	–2½	ECC Group	27	470	+3	Maxwell Comms.	397	158	–3	Smith & Nephew	1,400	127½	–1
Anglian Water	1,100	305	–2	Eastern Elect.	584	185	–4	Midland Bank	887	250		SmKl Beecham	1,900	738	–8
Argos	324	300	–5	East Midland Elect.	162	215	–4	Midlands Elect.	721	212	–4	SmKl Beecham Uts.	201	322	–35
Argyll Group	1,400	288	–8	Enterprise Oil	143	517	–2	NFC	176	217	–1	Smiths Inds.	250	285	–1
Arjo Wiggins	672	273	–5½	Eurotunnel Units	1,400	496	–29	NatWest Bank	1,700	334	–6	Southern Elect.	830	212	–4
Ass. Brit. Foods	170	477	–3	FKI	856	78	+½	National Power	1,100	157	–3	South Wales Elect.	39	209	–3
[illegible]				[illegible]				[illegible]				[illegible]			
British Land	144	303	–2	IMI	1,000	248	–6	Reuters	103	933	–7	Unilever	932	780	–8
BP	3,000	339		ICI	533	1306	–6	Rolls Royce	1,300	143	–2	United Biscuits	537	409	–6
British Steel	1,300	125	–1	Inchcape	698	398	–2	Rothmans	81	1121	–18	Utd. Newspapers	35	387	–1
British Telecom	5,700	433	–4½	Kingfisher	1,200	530	+1	Ryl Bk Scotland	1,080	184	–1	Vodafone	807	364	–5
Bunzl	2,900	85	–2	Ladbroke	1,500	257	–2½	Royal Insurance	634	338	–15	Wellcome	208	789	–7
Burmah Castrol	83	583	–6	Land Securities	302	522	–7	Saatchi	2,400	15		Welsh Water	442	399	–4
Burton	1,400	45	–2½	Laporte	214	600	–1	Sainsbury	1,000	360	–7	Wessex Water	45	422	–1
Cable & Wire.	1,400	561	–12	Legal & General	848	406	–9	Scottish & New.	537	412	–3½	Whitbread 'A'	380	465	–4
Cadburys	298	411	–8	Lloyds Abbey	884	410	–8	Scot. Hydro–Elect.	2,600	114	–2	Williams Hldgs.	379	335	–4
Calor Group	11	242	–1	Lloyds Bank	632	394	–3	Scottish Power	2,700	110	–2	Willis Corroon	28	301	–4
Carlton Comms.	314	495	–10	LASMO	1,200	313	+3	Sears	447	95	–1	Wimpey	680	169	–7
Coats Viyella	1,200	178	–3	London Elect.	2,900	219	–3	Sedgwick	619	268	–1	Yorkshire Elect.	428	243	–3
Comm. Union	503	484	–9	Lonrho	2,200	236	–3	Seeboard	149	213	–3	Yorkshire Water	375	406	–6

Based on the trading volume for a selection of Alpha securities dealt through the SEAQ system yesterday until 4.30pm. Trades of one million or more are rounded down.

Interim news hits Eurotunnel

HALF-TIME figures from Eurotunnel, the channel tunnel operator, and a warning that its opening may be delayed, disappointed the market and caused the shares to fall in thin trading.

The company warned that problems at TML, the Anglo-French tunnel constructor, could delay the tunnel's opening. Eurotunnel also said it would defer a dividend payout for one more year until the year 2000. The company forecast a loss of revenue of around £147m because of the phased opening of the tunnel and said total construction costs were likely to exceed £8bn by 1996.

In London, the shares dropped 29 to 496p on the news, although turnover was a meagre 1.4m. In Paris, where the shares are also quoted, heavy trade in Eurotunnel was reported and the stock declined by about 4 per cent.

Shell resilient

A resilient performance by the oil sector, and by Shell Transport in particular, owed much to County NatWest, which continued to recommend the sector as having moved back into the buying range. The broker included Shell in its prestigious "County 30" list of best buys at the expense of Tarmac, the construction/building materials group.

Shell closed only marginally easier at 504p. Tarmac was off 2 at 185p, after 183p. Minutes before the close, a line of 3.6m Tarmac was placed at 175p a share, a significant discount to market quotations.

County said the oil sector relative has decoupled from its long term correlation to the oil price and the US oil majors. It added that with the oil supply/demand balance looking increasingly fragile it feels the risks are now on the upside.

Shell's rating, the broker says, does not fully reflect its leading industry position, financial strengths and its drive to raise the return on capital employed, which could boost net earnings by 20 per cent over the next two to three years.

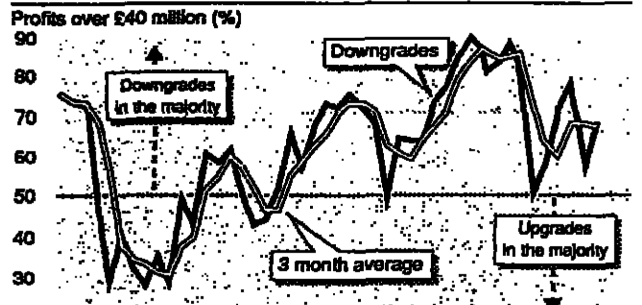
Kunick setback

Hopes that the leisure industry might be emerging from recession were dashed yesterday as Kunick, which specialises in the amusement machines business, warned the market that expectations for its current year profits were around 20 per cent too high. The shares were badly mauled, as were other leisure stocks, notably First Leisure, which also suffered a profits downgrade.

Kunick fell 9 to 26¼p with more than 1m shares traded. Smith New Court's leisure team lowered its current year profits estimate by £3m to £12.5m and next year's from £19m to £15m. Mr Bruce Jones at Smith said Kunick had suffered an unexpected decline in amusement machine rental charges.

Smith also cut profit estimates for First Leisure, one of the UK's biggest pure leisure groups. This year's estimate was reduced by £1m to £30.5m and next year's from £37m to £36m. First Leisure lost 7½ to 266½p. The Smith analyst did, however, see light at the end of the tunnel; "While it's disappointing to relate these stories, I'm certain these two companies are survivors and will prosper in better times."

Downgrades as % of forecast changes



City analysts have turned bearish again on the near term outlook for British companies, according to statistics prepared by Barclays de Zoete Wedd. The percentage of downgradings of profits forecasts is currently around 68.3 per cent of those analysts changing their views. The return to a bearish stance on the corporate outlook has followed the interim reporting season of the past few weeks, which has disclosed the effects of recessionary pressures on both company profits and balance sheets.

Tobacco switch

Downward pressure on Rothmans International was provided by securities house BZW, which published a note yesterday advising investors to switch out of the stock and into BAT Industries.

Mr Nyren Scott-Malden of BZW said: "We see Rothmans as at the top of its range, while BAT has a yield at least three times that of Rothmans and has committed itself to increasing its dividend above the level of inflation." Rothmans shares lost 18 to 1121p. However, BAT, whose Eagle Star insurance arm has suffered heavy losses in its mortgage indemnity business, failed to buck the day's trend and shed 13 to 651p.

British Aerospace remained friendless in spite of winning approval from shareholders for the £432m rights issue. The shares fell 13 to 402p on poor turnover of 1m. There is still a feeling that some of the rights stock may be left with the underwriters.

Meetings with a number of big funds and a presentation to institutions at the offices of its broker, Kleinwort Benson, calmed the nerves of holders of First National Finance (FNFC), whose shares almost halved last week. Ironically, it was a forecast of increased losses, pencilled in by Kleinwort, that was said to have triggered the slide. FNFC closed 9 up at 63p.

The life and composite insurance sectors were hit by what dealers described as a bear raid. Turnover in both sectors was minimal but share prices, especially in composites, were constantly being lowered owing to persistent stories that dividends would be cut in the preliminary reporting season. Rumours of rights issues were also circulating.

The composites, as well as Legal & General and BAT's subsidiary Eagle Star, have been hammered by big losses in the mortgage indemnity business. Legal lost 9 to 406p and General Accident 16 to 528p.

The exploration and production (E & P) sub-sector included two of the market's better performers, Lasmo and Goal Petroleum.

Goal, up 3 at 72p, responded to vague takeover stories and turnover reached a higher than usual 748,000 shares. Last week saw one institution, Abbey Life, reduce its stake to non-notifiable levels, with Scottish Amicable lifting its holding. Clients of one of the leading brokers recently visited Wytch Farm, where Goal has a substantial interest, while securities houses hosted a lunch for the company and a number of institutions.

A number of houses are advising clients that ICI is overvalued now that the prospect of a bid from Hanson is fading away. Shearson Lehman believes the shares should be sold down to 1200p if Hanson's 2.8 per cent stake is placed. Kleinwort Benson argues that although the chemicals giant is well placed for recovery, investors would be wise to take profits in the short term. The shares lost 6 to 1306p.

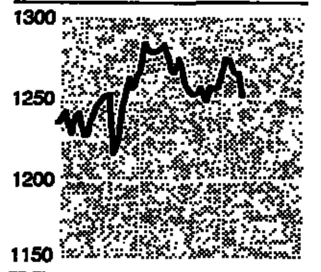
One securities house cut its forecast for Lonrho's current profits by £15m to £260m and the shares eased 3 to 236p.

Invergordon, the whisky distiller currently subject of a £286m bid from White & Mackay, of the US, rose 10 to 267p after the UK trade and industry secretary Mr Peter Lilley said he would not refer the bid to the UK Monopolies and Mergers Commission. The speculation was that White & Mackay would now have to improve its offer, possibly to around 300p, to win control. However, one cautious analyst predicted a figure of around 270p to 280p. There was also vague talk of a counter-bid.

MARKET REPORTERS:
Peter John, Joel Kibazo, Jim McCallum, Steve Thompson.

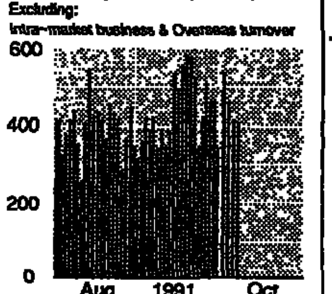
■ Other market statistics, including the FT-Actuaries Share Indices and London Traded Options, Page 26.

FT-A All-Share Index



Equity Shares Traded

Turnover by volume (million)
Excluding: intra-market business & Overseas turnover



NEW HIGHS AND LOWS FOR 1991

NEW HIGHS (73).
BRITISH FUNDS (1) Tr. 2½pc IL 2009, AMERICANS (2) Houston Inds., Morgan (JP), BANKS (6) Dai Ichi, Mitsubishi, Mitsui Trust & Banking, Sanwa, Secure Trust, Sumitomo, BREWERS (1) Invergordon Distillers, BUILDINGS (3) Boot (H), Epwin, Polypipe, CHEMICALS (3) Canning (W), Jeyes, Plysu, STORES (4) Fine Art Devlps., House of Lerose, Martin (A), Ritz Design, ELECTRICALS (7) Cambridge, Dale, Eurotherm, MTL Instruments, Menvier-Swain, Sage, Thorpe (FW), ENGINEERING (3) Morris Ashby, Saville Gordon, TACE, FOODS (3) Bank (SC), Northern, Park, INDUSTRIALS (12) AIM, Boxmore, Bridport-Gundry, Dolphin Packaging, Greenacre, Great Southern, ML Laboratories, Medeva, Mitsubishi, Pentland, Portmeirion Potteries, Reliance Security, INSURANCE (1) Domestic & General, LEISURE (3) Capital Radio, LWT 3.9375p Cnv. Pfd., Stanley, NEWSPAPERS (4) Euromoney Publishers, Headline Book Publishing, Johnston Press, News Corp., PROPERTY (1) Mountview Estates, TEXTILES (5) Dawson, Drummond, Hicking Pentecost, Leeds, Lyles (S), TRANSPORT (1) Mayne Nickless, TRUSTS (8) Aberforth Smlr. Wrrnts., Anglo Scandinavian, Baring Puma, Fidelity Japan OTC Wrrnts., Foreign & Colonial Smlr. Cos., North British Canadian, Rathbone Bros, St. Andrew, OILS (1) Global Natural Res., MINES (4) Delta Gold, Doral Res., Metana Minerals, St. Barbara.
NEW LOWS (35).
AMERICANS (1) Allegheny & Western Energy, BUILDINGS (8) Costain, Evered, Freeman, Graften, Higgs & Hill, Tarmac, Taylor Woodrow, Ward Group, STORES (1) Alan Paul, ELECTRICALS (4) Amstrad, Danahron, Enterprise Computer, Ericsson (LM), ENGINEERING (2) Beauford, Robinson (T), INDUSTRIALS (5) Eltem, Hadleigh, Melville, Nu-Swift, Stainless Metalcraft, INSURANCE (1) Royal, LEISURE (2) Kunick, Quadrant, PROPERTY (1) Mountleigh 6.25pc Prf., TRUSTS (8) Aberdeen Trust, City & Commercial Inc., JF Philippine Wrrnts., Jakarta Fund, Malacca Fund Ptg., River Plate Wrrnts., OILS (2) Cairn Energy, Midland & Scottish, PLANTATIONS (1) Cons. Plantations., MINES (1) Dominion Mining.

EQUITY FUTURES AND OPTIONS TRADING

STOCK Index futures pushed the underlying cash market downwards yesterday as sellers came in at the opening and held sway throughout the day, writes Peter John.

The December Footsie contract remained very close to its estimated fair value - the premium which allows for dividend flow and financing costs on the underlying Footsie stocks - which is calculated at around 42.5 above the Index.

December opened down, never bobbed more than three points above fair value and at times sank up to five points below it. However, there was some good two-way business and at the official close 5,240 lots had been dealt.

The December contract closed at 2636, a premium of 40 points to the Index and down 29 points on the day.

The Footsie contract was the only significant performer in the London traded Options Market. It represented more than a third of the market's turnover of 20,158 lots and traders said that one house was a strong seller of the December put premium which has built up in the Footsie.

Amstrad was the top equity option. Its turnover of 1,618 lots was boosted by a technical trade, which accounted for 600 contracts in the long-dated options.

LONDON SHARE SERVICE

BRITISH FUNDS

1991 High	1991 Low	Stock	Price £	+ or –	Yield Int.	Yield Red.
		"Shorts" (Lives up to Five Years)				
100¼	99½	Exch. 11pc 1991	100¼xd		10.99	10.33
99	96	Treas. 8pc 1991	99		8.04	10.07
101	100	Treas. 12¾pc 1992‡‡	100		12.66	[illegible]
100	97	Treas. 10pc 1992	99		10.00	[illegible]
133	125	Treas. 2pc IL 1992‡‡	133		1.99	[illegible]
99	95	Treas. 8pc 1992‡‡	99		8.07	[illegible]
100	98	Treas 10¼pc Cv 1992‡‡	100xd		10.45	[illegible]
96	91	Treas. 3pc 1992	96		3.10	[illegible]
102	100	Exch. 12¼pc '92	102		12.00	[illegible]
104	102	Exch 13½pc 1992	103		13.05	[illegible]
98	94	Treas 8¾pc 1993	98		8.39	[illegible]
100	97	Treas 10pc 1993‡‡	100xd		9.93	[illegible]
104¼	102	Treas 12½pc 1993‡‡	104		11.94	9.55
95	89	Funding 6pc 1993‡‡	95		6.31	8.81
108	105	Treas 13¾pc 1993‡‡	107		12.76	9.59
97	92	Treas. 8¼pc 1994	97		8.69	9.56
111	108	Treas 14½pc 1994‡‡	110	+1/16	13.13	9.52
109	105	Exch 13½pc 1994	108xd		12.44	9.62
101	96	Treas. 10pc Ln. 1994‡‡	100	+1/16	9.90	9.56
107	103	Exch. 12¼pc 1994	106		11.69	9.65
98	93	Treas 9pc 1994‡‡	98		9.16	9.61
106	102	Treas 12pc 1995	106		11.27	9.60
89	82	Exch 3pc Gas 90-95	88xd		3.39	6.67
102	96	Exch. 10¼pc 1995	101		10.06	9.60
110	105	Treas 12¾pc 1995‡‡	110		11.58	9.67
114	109	Treas. 14pc '96	114		12.27	9.86
99	92	Treas. 9pc 1992-96‡‡	99	+1/16	9.07	9.20
119	115	Treas 15¼pc 1996‡‡	119xd		12.77	9.87
112	108	Exch 13¼pc 1996‡‡	112		11.79	9.80
		Five to Fifteen Years				
101	95	Conversion 10pc 1996	101	+	9.86	9.60
101	97	Do. 10pc 1996 B	101	+	10.11	9.61
114	108	Treas 13¼pc 1997‡‡	113	+	11.64	9.80
103	97	Exch 10½pc 1997	103		10.15	9.62
96	89	Treas 8¾pc 1997‡‡	96		9.07	9.53
123	117	Exch 15pc 1997	122xd	+	12.23	9.92
100	93	Exch. 9¾pc 1998	100	+	9.70	9.61
88	80	Treas 6¾pc 1995-98‡‡	88	–	7.63	9.11
128	121	Treas. 15½pc '98‡‡	128	+	12.09	9.79
111	104	Exch. 12pc 1998	111	+	10.77	9.72
100	92	Treas 9½pc 1999‡‡	99	+	9.51	9.49
113	105	Exch. 12¼pc 1999	113	+	10.83	9.73
104	97	Treas. 10½pc 1999	104	+	10.05	9.64
103	95	Conversion 10¼pc 1999	103	+	9.93	9.65
97	89	Conversion 9pc 2000‡‡	97	+	9.25	9.46
118	110	Treas. 13pc 2000	118	+	10.99	9.82
103	94	Treas 10pc 2001	102	+	9.76	9.56
119	113	Treas. 14pc '98-01	119	+	11.73	9.91
101	92	Treas 9¾pc 2002	101	+	9.63	9.55

BRITISH FUNDS—Contd

1991 High	1991 Low	Stock	Price £	+ or –	Yield Int.	Yield Red.
104	94	Treas 10pc 2003	103½	+	9.70	9.54
111	102	Treas. 11½pc 2001-04	110xd	+	10.42	9.77
62	53	Funding 3½pc '99-04	61	+	5.67	8.45
100	90	Conversion 9½pc 2004	99xd	+	9.52	9.52
25	24	Conversion 9½pc 2004 A	24	+	9.51	9.51
100	90	Conversion 9½pc 2005	99xd	+	9.52	9.51
[illegible]						
		Over Fifteen Years				
[illegible]						
97	88	Conv 9pc Ln 2011‡‡	96	+	9.33	9.38
98	91	Cnv. 9pc 2011 A	96	+	9.51	9.55
66	58	Treas. 5½pc 2008-12‡‡	64	+	8.48	9.33
85	76	Treas. 7¾pc 2012-15‡‡	84	+	9.19	9.40
125	113	Exch. 12pc '13-'17	123	+	9.70	9.42
		Undated				
41	37	Consols 4pc	41	+	9.71	–
37	33	War Loan 3½pc‡‡	36		9.49	–
60	57	Conv. 3½pc '61 Aft	60	–	5.81	–
30	28	Treas. 3pc '66 Aft	30xd		9.92	–
26	23	Consols 2½pc	25xd	+	9.71	–
26	23	Treas. 2½pc	25	–	9.80	–
		Index-Linked				
		(b)			(1)	(2)
122	115	Treas. 2pc '94 (102.9)	122		2.57	3.54
176	168	Do. 2pc '96 (67.9)	176	+	3.32	3.85
144	137	Do 2½pc '01 (78.3)	144	+	3.88	4.18
140	133	Do. 2½pc '03 (78.8)	140	+	3.93	4.19
142	135	Do. 2pc '06 (69.5)	142	+	4.02	4.22
130	124	Do. 2½pc '09 (78.8)	130	+	4.05	4.23
134	128	Do. 2½pc '11 (74.6)	134	+	4.06	4.23
110	105	Do. 2½pc '13 (89.2)	110	+	4.07	4.22
118	113	Do. 2½pc '16 (81.6)	117	+	4.07	4.22
113	109	Do. 2½pc '20 (83.0)	112xd	+	4.08	4.21
95	91	Do. 2½pc '24‡‡ (97.7)	93	+	4.06	4.19

Prospective real redemption rate on projected inflation of (1) 10% and (2) 5%. (b) Figures in parentheses show RPI base for indexing, (ie 8 months prior to issue) and have been adjusted to reflect rebasing of RPI to 100 in January 1987. Conversion factor 3.945. RPI for January 1991: 130.2 and for August 1991: 134.1.

INT. BANK AND O'SEAS

1991 High	1991 Low	Stock	Price £	+ or –	Yield Int.	Yield Red.
107¾	95¾	African Dv Bk 11¼Ln 2010	106	+	10.41	10.27
102	91	Asian Dev Bk 10¼pcLn 2009	101	+	10.09	10.05
116	105	Int-Am Dev Bk 12½pc 2003	114	+	10.87	10.21
97	86	Do. 9¾pcLn 2015	96	+	10.09	10.12
125	101	Utd. Mexican States 16½pc 2008	124½	+	13.25	12.90

COMMONWEALTH & AFRICAN LOANS

95	84½	5th Rhod. 87-92 Asstd	95		4.74	–

LOANS

Building Societies

106	102	N'wide Anglia 3¾pc Ln 2021	105	+		5.38
107	104	Do. 4.25pcIL '24	107	+		5.02

Public Board and Ind.

53	52	Met. Wtr. 3pc 'B'	53		5.66	9.95

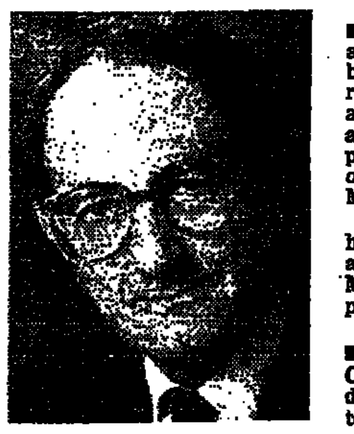
FOREIGN BONDS & RAILS

1991 High	1991 Low	Stock	Price £	+ or –	Div % Gross	Red. Yield
50	50	Greek 7pc Ass	50		3.50	f7.00
50	50	Do. 6pc 28 Stb. Ass	50		3	f6.00
50	50	Do 4pc Mixed Ass	50		2	f4.00
55	55	Hung. '24 Ass	55		2.75	f3.57
133	120	Hydro Quebec 15pc 2011	132	+	15.0	10.88

Continued on next page

APPOINTMENTS

Heathrow Airport managing director



■ Mr Mike Roberts *(pictured)* has been appointed managing director of HEATHROW AIRPORT LTD, a wholly owned subsidiary of BAA. He has been acting managing director since the death of former managing director Mr Alan Proctor in June this year.

Mr Roberts, 46, joined BAA in 1967 and served in a variety of engineering posts within the group before moving to terminal management at Gatwick in 1982. He held the post of operations director of Heathrow Airport Ltd from 1988 until his current appointment.

Also new to the Heathrow Airport Ltd board is finance director Mr John Stent. He joined BAA plc in 1988 and was most recently divisional finance director for BAA Holdings. He has previously worked for Hamleys and Marks and Spencer in senior financial positions.

■ Mr William J. Else has been appointed head of electronic banking at MIDLAND BANK, responsible for all domestic and international corporate and correspondent banking payment services. He was head of international marketing at Midland Montagu.

Mr Geoffrey Hanley becomes head of information services and business management and Mr Colin Tyne head of payments product marketing.

■ At SEDGWICK GROUP, Mr Craig Bennett has been named director information technology for the group worldwide. He joined the company in 1989 as director systems planning, having previously worked for Hill Samuel Life Assurance as managing director.

Mr Tim Riddell and Mr Iain Simpson are being promoted from associate directors to directors of SEDGWICK LLOYD'S UNDERWRITING AGENTS LTD, subject to the approval of Lloyd's.

■ Mr Allan Richens will join the main board of HOLLAS GROUP as a director.

Mr Richens has been chairman of Hawkshead Sportswear, the group's mail order retailer, since last year, and for the period 1983-90 he was financial director of Empire Stores.

■ WHESSOE has made Mr Alastair Dinwiddie managing director of its instrumentation and control division.

He formerly served with Peek Plc, where he was in charge of corporate business development throughout the Far East region. Before that he worked overseas with Schlumberger providing instrumentation services to the oil industry.

■ ANDREW WEIR & CO, holding company of the Andrew Weir Group, said Sir Brian Shaw *(pictured)* has joined the board as a non-executive director.

Sir Brian, 58, who is chairman of ANZ Grindlays Bank, brings to the new position his own particular experience in the liner cargo trade, having served as chairman of Furness Withy.

■ Mr Michael Sheil has been named managing director of GORING KERR, succeeding Mr Dick Richardson, whose departure was announced recently. Mr Sheil has been serving with Fisher Controls, Leicester.

■ DOBSON PARK INDUSTRIES said chairman Mr Gordon Marshall has retired from the board with effect from September 30, having reached the age of 65.

Mr Alan Kaye has been appointed chairman in addition to his existing duties as group chief executive, a position he has held since 1985. The company recently named Mr Oliver Chapple as deputy group chief executive.

■ At SCOTTISH AMICABLE, Mr Ashok K. Gupta will become general manager (actuarial) from November 1. He is to succeed Mr Raymond Anderson, who will retire at the end of the year when Mr Gupta will assume the duties of appointed actuary.

Mr Gupta is currently a principal with Tillinghast, the insurance and risk management consultancy division of Towers Perrin.

■ Mr Donald Carr became non-executive chairman of NSM, passing all his executive responsibilities to Mr John Jermine, who was appointed chief executive on March 4. Mr Carr will retire as chairman next April.

LONDON SHARE SERVICE

● Latest Share Prices are available on FT Cityline, call 0898 43 + four digit code. Calls charged at 36p/minute cheap rate and 48p/minute at all other times. To obtain a free Share Code Booklet call 071-925-2128.

AMERICANS

[illegible]

CANADIANS

[illegible]

BANKS, HP & LEASING

[illegible]

Hire Purchase, Leasing, etc.

[illegible]

BEERS, WINES & SPIRITS

[illegible]

BUILDING, TIMBER, ROADS

[illegible]

BUILDING, TIMBER, ROADS – Contd

[illegible]

CHEMICALS, PLASTICS

[illegible]

DRAPERY AND STORES

[illegible]

DRAPERY AND STORES – Contd

[illegible]

ELECTRICALS

[illegible]

ELECTRICITY

[illegible]

ENGINEERING

[illegible]

FOOD, GROCERIES, ETC

[illegible]

HOTELS AND CATERERS

[illegible]

INDUSTRIALS (Miscel.)

[illegible]

INDUSTRIALS (Miscel.) – Contd

[illegible]

INDUSTRIALS (Miscel.) – Contd

[illegible]

INSURANCES

[illegible]

LEISURE

[illegible]

LONDON SHARE SERVICE

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LEISURE—Contd

MOTORS, AIRCRAFT TRADES

Commercial Vehicles

Components

Garages and Distributors

NEWSPAPERS, PUBLISHERS

PAPER, PRINTING, ADVERTISING

PROPERTY

PROPERTY—Contd

SHOES AND LEATHER

SOUTH AFRICANS

TEXTILES

TOBACCOS

TRANSPORT

INVESTMENT TRUSTS

INVESTMENT TRUSTS—Contd

Net asset values supplied by County NatWest Wood Mackenzie as a guide only.

FINANCE, LAND, ETC

FINANCE, LAND, ETC—Contd

WATER

OIL AND GAS

PLANTATIONS

Rubbers, Palm Oil

Teas

MINES

Central Rand

Eastern Rand

Far West Rand

O.F.S.

Diamond and Platinum

Central African

Finance

MINES—Contd

Australians

Tins

Miscellaneous

1991 High	Low	Stock	Price	+ or –	Div Net	C'vr	Y'ld Gr's
£11¾	£7⅞	Homestake Mining $1	£9	+⅛	Q20c	–	1.3
61	30	Overnia West......y	53	–1	–	–	–
46	35	Kells Mins. Ir5p......y	35	......	–	–	–
25	7½	Kenmare......y	8	–½	n–	–	–
18	15	Navan Resources......y	16	......	n–	–	–
99	52	Northgate Expl. C$1	63½	+3	s–	–	–
16	5	North West Exlp.	5	......	–	–	–
188	82	Oryx Gold Hldgs.	125	......	–	–	–
23	10	Oveca Gold IR 2p..y	18	–1	–	–	–
44	17	Plateau Mining 20p..β	18	......	–	–	–
605	404	RTZ 10p......α	559	–7	19.5	1.7	4.7
11	3¼	Thorco Res. Inc.	10¼	......	–	–	–
10	3	Vizcaya Hldgs 5p...β	3	......	–	–	–
152	76	Wstn & Pac Res	79	+3	–	–	–
133	118	Young Group 10p..β	120	......	5.2	1.8	5.8

NOTES

Stock Exchange dealing classifications are indicated to the right of security names: α Alpha refers to shares traded through SEAQ by at least two marketmakers and with a normal market size of 2,000 or more, based on experience of how many of its shares are traded in the typical deal. β Beta refers to all other shares. γ Gamma refers to other traded instruments.

Highs and lows are based on intra-day mid prices. Unless otherwise indicated, prices and net dividends are in pence and denominations are 25p. Estimated price/earnings ratios and covers are based on latest annual reports and accounts and, where possible, are updated on half-yearly figures. P/Es are calculated on "net" distribution basis, earnings per share being computed on profit after taxation and unrelieved ACT where applicable; bracketed figures indicate 10 per cent or more difference if calculated on "nil" distribution. Covers are based on "maximum" distribution; this compares gross dividend costs to profit after taxation, excluding exceptional profits/losses but including estimated extent of offsettable ACT. Yields are based on middle prices, are gross, adjusted to ACT of 25 per cent and allow for value of declared distribution and rights.

Estimated Net Asset Values (NAVs) are shown for Investment Trusts, in pence per share, along with the percentage discounts (Dis) or premiums (Pm -) to the current pre-closing share price. The NAV basis assumes prior charges at par value, convertibles converted and warrants exercised if dilution occurs.

- ● "Tap Stock"
- ᵖ Highs and lows marked thus have been adjusted to allow for rights issues for cash
- † Interim since increased or resumed
- ‡ Interim since reduced, passed or deferred
- ‡‡ Tax-free to non-residents on application
- ● Figures or report awaited
- ♥ Not officially UK listed; dealings permitted under rule 535(4)(a)
- ✱ USM; not listed on Stock Exchange and company not subjected to same degree of regulation as listed securities.
- ‡‡ Not officially listed.
- ‡ Price at time of suspension
- ¶ Indicated dividend after pending scrip and/or rights issue; cover relates to previous dividend or forecast.
- ♦ Merger bid or reorganisation in progress
- ♣ Not comparable
- ♠ Same interim; reduced final and/or reduced earnings indicated
- § Forecast dividend; cover based on earnings updated by latest interim statement.
- ‡ Cover allows for conversion of shares not now ranking for dividends or ranking only for restricted dividend.
- ☆ Cover does not allow for shares which may also rank for dividend at a future date. No P/E usually provided.
- ‖ No par value

B.Fr. Belgian Francs. Fr. French Francs ## Yield based on assumption Treasury Bill Rate stays unchanged until maturity of stock. a Annualised dividend. b Figures based on prospectus or other official estimates. c Cents. d Dividend rate paid or payable on part of capital, cover based on dividend on full capital. e Redemption yield. f Flat yield. g Assumed dividend and yield. h Assumed dividend and yield after scrip issue. j Payment from capital sources. k Kenya. m Interim higher than previous total. n Rights issue pending q Earnings based on preliminary figures. s Dividend and yield exclude a special payment. t Indicated dividend: cover relates to previous dividend, P/E ratio based on latest annual earnings. u Forecast, or estimated annualised dividend rate, cover based on previous year's earnings. v Subject to local tax. x Dividend cover in excess of 100 times. y Dividend and yield based on merger terms. z Dividend and yield include a special payment: Cover does not apply to special payment. A Net dividend and yield. B Preference dividend passed or deferred. C Canadian. E Minimum tender price. F Dividend and yield based on prospectus or other official estimates for 1990-91. G Assumed dividend and yield after pending scrip and/or rights issue. H Dividend and yield based on prospectus or other official estimates for 1991. K Dividend and yield based on prospectus or other official estimates for 1990. L Estimated annualised dividend, cover and P/E based on latest annual earnings. M Dividend and yield based on prospectus or other official estimates for 1991-92. N Dividend and yield based on prospectus or other official estimates for 1989-90. P Figures based on prospectus or other official estimates for 1991. Q Gross. R Forecast annualised dividend, cover and p/e based on prospectus or other official estimates. T Figures assumed. W Pro forma figures. Z Dividend total to date.

Abbreviations: xd ex dividend; xc ex scrip issue; xr ex rights; xa ex all; xt ex capital distribution.

REGIONAL & IRISH STOCKS

The following is a selection of Regional and Irish stocks, the latter being quoted in Irish currency.

Craig & Rose £1..β	640	......	
Finlay Pkg. 5p....β	26	......	
Holt (Jos) 25p....β	1985xd	......	
Helton Hldgs......y	38	......	
IRG	125	......	
United Drug	175	......	

IRISH

Cap. 8½% Ln. 2010	£94	......
9pc Cap Ln. 1996	£98¼	......
Fin. 13% 97/02	£114¼	......
Arnotts	200	......

TRADITIONAL OPTIONS

3-month call rates

Industrials

	p
Allied-Lyons	50
Amstrad	6
Astec (BSR)	5
BAT	53
BOC Grp.	48
BTR	33
Barclays	34
Blue Circle	20
Boots	33
Bowaters	55
Brit Aerospace	35
British Steel	10
Brit. Telecom	35
Cadburys	35
Charter Cons.	42
Comm Union	40
Courtaulds	38
Eurotunnel	50
FKI	5
FNFC	10
Forte	21
Gen Accident	43
GEC	16
Glaxo	110
Grand Met	67
Guardian	14
GKN	28
Hanson	17
Hawker Sidd	55
ICI	95
Ladbroke	21
Legal & Gen	33
Lex Service	16
Lloyds Bank	30
Lucas Inds	12
Marks & Spencer	21
Midland Bk	20
Nat West Bk	26
P & O Dfd	41
Racal Elect	6
RHM	23
Rank Org Ord	55
Ratners	12
Reed Intnl	35
Sears	6½
SmKl. Beecham A	53
TI	39
TSB	11
Tesco	21
Thorn EMI	65
T&N	14
Unilever	60
Vickers	16
Wellcome	60

Property

Brit Land	27
Control Secs	2
Land Securities	41
MEPC	42
Mountleigh	4

Oils

Aviva Petlm	3
Brit Petroleum	26
Burmah Castrol	47
Conroy Petlm	8
Gaelic Res	1
Premier	4
Shell	40
Tuskar Res	1
Ultramar	28

Mines

Lonrho	20
RTZ	46

This service is available to companies whose shares are regularly traded in the United Kingdom for a fee of £1,150 a year for each security shown, subject to the Editor's discretion.

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AUTHORISED UNIT TRUSTS

For Geoffrey Morley see Commercial Union

Guide to pricing of Authorised Unit Trusts

Compiled with the assistance of Lautro §§

INITIAL CHARGE: Charge made on sale of units. Used to defray marketing and administrative costs, including commission paid to intermediaries. This charge is included in the price of units.

OFFER PRICE: Also called issue price. The price at which units are bought by investors.

BID PRICE: Also called redemption price. The price at which units are sold back by investors.

CANCELLATION PRICE: The minimum redemption price. The maximum spread between the offer and bid prices is determined by a formula laid down by the government. In practice, most unit trust managers quote a much narrower spread. As a result, the bid price is often set above the cancellation price. However, the bid price might be moved to the cancellation price by the managers at any time, usually in circumstances in which there is a large excess of sellers of units over buyers.

TIME: The time shown alongside the fund manager's name is the time of the unit trust's valuation point unless another time is indicated by the symbol alongside the individual unit trust name. The symbols are as follows: (♥) - 0001 to 1100 hours; (♣) - 1101 to 1400 hours; (♦) - 1401 to 1700 hours; (♠) - 1701 to midnight. Daily dealing prices are set on the basis of the valuation point; a short period of time may elapse before prices become available.

HISTORIC PRICING: The letter H denotes that the managers will normally deal on the price set on the most recent valuation. The prices shown are the latest available before publication and may not be the current dealing levels because of an intervening portfolio revaluation or a switch to a forward pricing basis. The managers must deal at a forward price on request, and may move to forward pricing at any time.

FORWARD PRICING: The letter F denotes that the managers deal at the price to be set on the next valuation. Investors can be given no definite price in advance of the purchase or sale being carried out. The prices appearing in the newspaper are the most recent provided by the managers.

SCHEME PARTICULARS AND REPORTS: The most recent report and scheme particulars can be obtained free of charge from fund managers.

Other explanatory notes are contained in the last column of the FT Managed Funds Service.

§§ Life Assurance and Unit Trust Regulatory Organisation, Centre Point, 103 New Oxford Street, London WC1A 1QH Tel: 071 – 379 – 0444.

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	Init Charge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Grs
Sovereign Unit Tst Mngrs Ltd (1000)F						
12 Christchurch Rd, Bournemouth 0202 298422						
Cash	3	51.28	51.28	51.79	+0.02	10.6
Colriid Priority	5½	48.46	48.72	51.97	-0.25	9.23
Ethical	5¼	50.25	51.27xd	54.54	-0.30	4.61
Europe Growth	5½	46.95	46.95	50.00	+0.02	3.5
Income	5½	47.99	48.48	51.71	-0.22	7.27
Intl Growth	5½	64.14	64.62	68.93	-0.13	3.35
Managed	5½	58.92	59.59	63.56	-0.24	4.39
UK Growth	5¼	52.27	52.85	56.37	-0.29	5.38
Standard Chartered Equitor (1200)F						
69 Old Broad Street, EC2M 1QS 071-780 6521						
Mngd Exempt Acc	3	197.3	199.6	207.9	-0.9	2.96
Do Income	3	188.3	190.5	198.4	-0.9	2.96
Standard Life Tst Mgmt Ltd (0629)H						
3 George St, Edinburgh EH2 2XZ 0800 393777						
Managed Acc	5¼	36.51	36.51	38.80	..	2.95
UK Equity Gth Acc	5¼	48.97	49.82	52.99	-0.1	1.92
UK Eq High Inc Inc	5¼	34.32	35.10xd	37.30	....	5.27
UK Eq High Inc Acc	5¼	38.59	39.47	41.94	..	5.27
UK Equity Gen Acc	5¼	47.65	48.41	51.44	-0.1	2.89
UK Equity Gen Inc	5¼	37.28	37.89xd	40.26		2.89
UK Larger Cos Acc F	7½	309.2	313.2	339.9	-0.2	4.32
UK Larger Cos Inc F	7½	248.9	252.5xd	273.7	-0.2	4.32
Gilt & Fxd Int Inc	5¼	27.35	27.43xd	29.01	-0.1	8.20
Euro Larg Cos Acc F	7½	214.8	219.0	237.7	+0.1	2.09
Nth American Acc	5¼	33.98	34.19	36.33	.	0.73
Far East Acc	5¼	42.30	43.38	46.10	+0.2	0.13
European Acc	5¼	33.27	34.95	37.14	-0.2	1.76
Stewart Ivory Unit Tst Mgrs Ltd (1200)H						
45 Charlotte Sq, Edinburgh 031-226 3271						
American ♥	5	290.3	290.3	309.8	-0.2	1.36
(Accum Units) ♥	5	339.6	339.6	362.4	-0.3	1.36
British	5	826.4	836.4	884.9	-5.5	5.41
(Accum Units)	5	1351.7	1374.2	1453.8	-9.1	5.41
European	5	321.8	321.8xd	343.7	..	2.52
(Accum Units)	5	348.8	348.8	372.5	..	2.52
Japan	5	119.6	119.6	127.2	+0.3	-
(Accum Units)	5	120.5	120.5	128.2	+0.3	-
New Pacific	5	165.2	165.2	175.6	+0.4	1.98
(Accum Units)	5	169.6	169.6	180.3	+0.4	1.98
PEP Oct 2	5	146.0	148.1	156.8		3.58
Mngd Equity	5	123.4	125.4	132.7	-0.4	3.48
Mngd Equity Acc	5	130.9	133.0	140.7	-0.5	3.48
Mngd Cash	5	95.51	95.51xd	98.36	+0.06	10.38
(Accum Units)	5	115.4	115.4	118.9	+0.1	10.38
Mngd Fund Inc Acc Aug 28	5	123.0	123.0	130.4	....	6.74
Majority Stlg	1	99.54	99.54xd	100.52	+0.06	10.05
Majority Stlg Acc	1	106.40	106.40	107.45	+0.06	10.05
Starbrand Intl Inv Mngrs Ltd (1200)F						
Admin: 5 Rayleigh Rd, Hutton, Brentwood, Essex						
Enquiries 0277 227300 Dealing 0277 261010						
International Oct 1	0	51.00	51.00	51.53	....	13.45
Sun Alliance Unit Tst Mngmt Ltd (1200)F						
Sun Alliance House, Horsham 0403 56293						
Equity	6	617.3	624.7	668.1	-4.4	3.08
North America	6	76.05	76.05	81.34	+0.17	1.07
Far East	6	91.17	91.17	97.50	+0.30	0.92
W'wide Bond	6	47.19	47.37xd	50.39	+0.20	4.71
European	6	65.88	65.88xd	70.46	+0.06	1.39
Equity Income	6	71.78	72.71	77.77	-0.58	5.21
Portfolio	6	58.15	58.15	62.19	-0.07	1.84
Sun Life of Canada Unit Mgrs Ltd (1000)H						
Basing View, Basingstoke, Hants 0800 525725						
American Growth	6	25.07	25.07xd	26.82	(z)	0.62
Managed Assets	6	104.63	105.24	112.56	(z)	3.72
UK Income	6	33.21	33.67	36.02	(z)	4.51
UK Growth	6	32.28	32.65	34.93	(z)	3.21
Worldwide Growth	6	24.41	24.41	26.11	(z)	1.04

Century Life Plc
2 Eyre Street Hill, London EC1R 5AE 071-278 4488

Eagle Star Life Assurance Co Ltd
Bath Road, Cheltenham GL53 7LQ 0242 221 311

Guardian Royal Exchange
Royal Exchange, EC3 071-283 7101

Legal & General—Contd.

Manulife Group—Contd.

INSURANCES

OTHER UK UNIT TRUSTS

Continued on next page

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N & P Life Assurance Ltd
6-7 Bedford Row, London, WC1R 4UJ 071-430 2348

	Bid Price	Offer Price	+ or -	Yield Gross
Life Managed Fd	108.9	114.7	-0.3	-
Pension Managed Fd	108.0	113.7	-0.7	-
Life Deposit Fd	109.8	115.6	...	-
Pension Deposit Fd	116.1	122.3	-0.1	-

For National Fis see Target Life

National Mutual Life
The Priory, Priory Pk, Hitchin, SG5 2DW 0462 422422

	Bid Price	Offer Price	+ or -	Yield Gross
Harvester Pension Funds				
Managed	168.9	177.8	----	-
UK Equity	182.2	191.8	----	-
Overseas Equity	131.4	138.4	----	-
Fixed Interest	153.4	161.5	----	-
Property	137.2	144.5	----	-
Index Linked	151.1	159.1	----	-
Deposit	162.0	170.6	----	-
With Profits (B)	132.5	139.6	...	-

National Provident Institution
48 Gracechurch St, London EC3P 3HH 071-623 4200

	Bid Price	Offer Price	+ or -	Yield Gross
Managed	358.7	377.6	-1.5	-
UK Equity	456.8	480.9	-3.4	-
Overseas Eq	342.8	360.9	-0.1	-
Americas	282.8	297.7	+1.0	-
Far East	379.0	399.0	+0.5	-
Property	194.6	204.9	-0.2	-
Fixed Int	269.8	284.1	+0.2	-
Indexed Gilt	160.7	169.2	+0.1	-
Deposit	186.2	196.0	+0.1	-
With Profit	103.6	109.1	+0.1	-
Pension Fund (Accum Units)				
Managed	515.9	543.1	-2.3	-
UK Equity	617.2	649.7	-4.5	-
Overseas Eq	576.7	607.1	-0.7	-
Americas	357.7	376.6	+0.4	-
Far East	616.9	649.4	-1.2	-
Property	247.5	260.6	-0.2	-

Providence Capital Life Assc. Co Ltd
2 Bartley Way, Hook, Hants RG27 9XA 0256 768888

	Bid Price	Offer Price	+ or -	Yield Gross
UK Equity Acc	230.8	243.5	-2.3	-
UK Fixed Inc Acc	186.1	196.4	-0.4	-
Intl Equities Acc	173.9	183.5	...	-
UK Managed Acc	176.6	186.2	-0.9	-
Property Acc	226.5	239.0	...	-
Money Acc	131.9	139.2	+0.1	-
Special Market Acc	148.4	156.6	+0.9	-
Japan Equity Acc	105.8	111.7	+0.6	-
North American Acc	101.9	107.5	+0.1	-
Pacific Acc	93.8	99.0	+0.4	-
Technology Acc	122.1	128.9	+1.1	-
Nat Resources Acc	54.7	57.8	+0.5	-
European Acc	99.9	105.4	-0.6	-
Residential Prop Acc	94.6	99.8	...	-
Swiss Equities Acc	33.3	35.2	-0.3	-
Hong Kong Acc	68.1	71.9	+0.4	-
UK High Inc Eq Acc	75.7	79.9	-0.7	-
Int Fixed Interest Acc	59.9	63.2	+0.1	-
Int Managed Acc	56.4	59.4	...	-
HIP Managed Acc	117.6	124.0	...	-
HIP Managed II Acc	103.1	108.7	-0.1	-
HIP Managed III Acc	110.0	116.0	-0.2	-
Total Investment Bond				
UK Equity Initial		156.7	-1.5	-
UK Fixed Int Initial		126.6	-0.3	-
Intl Equities Initial		117.4	...	-
UK Managed Initial		120.1	-0.6	-
Property Initial		155.1	...	-
Money Initial		90.1	...	-
Special Market Initial		115.1	+0.6	-
Japan Equity Initial		82.0	+0.3	-
North American Initial		79.0	+0.1	-
Pacific Initial		72.8	+0.4	-
Technology Initial		94.7	+0.8	-
Nat Resources Initial		42.4	+0.3	-
European Initial		89.4	-0.6	-
Residential Prop Init		90.2	...	-
Swiss Equities Initial		31.8	-0.2	-
Hong Kong Initial		65.0	+0.4	-
UK High Inc Eq Init		72.2	-0.7	-
Int Fixed Interest Init		57.9	+0.1	-
Int Managed Init		54.6	-0.1	-
HIP Managed Init		114.1	-0.1	-

Royal Heritage Life Assurance Ltd – Contd.

	Bid Price	Offer Price	+ or -	Yield Gross
Perpetual Funds				
International Growth	114.9	121.0	-0.2	-
Income	117.5	123.7	-0.5	-
American Growth	136.1	143.3	+1.0	-
Intl Emerging Cos	130.7	137.6	+0.2	-
Far East Growth	150.6	158.6	-3.4	-
European	132.0	139.0	-0.8	-
Managed	131.9	138.9	-0.4	-
TSB Funds				
Income	117.8	124.0	-0.9	-
Managed	142.0	149.5	-0.9	-

Royal Life Insurance Ltd
New Hall Place, Liverpool L69 3HS

	Bid Price	Offer Price	+ or -	Yield Gross
Royal Shield Fd	720.2	762.[illegible]	[illegible]	[illegible]
Royal Life (Unit Linked Assurance) Ltd				
Managed Fund	290.7	305.[illegible]	[illegible]	[illegible]
Equity Fund	402.9	424.[illegible]	[illegible]	[illegible]
Property Fund	222.6	234.[illegible]	[illegible]	[illegible]
International Fund	323.3	340.[illegible]	[illegible]	[illegible]
Gilt Fund	270.3	284.[illegible]	[illegible]	[illegible]
Money Fund	191.7	201.[illegible]	[illegible]	[illegible]
United States Fund	148.9	156.[illegible]	[illegible]	[illegible]
Pacific Basin	197.3	207.[illegible]	[illegible]	[illegible]
Royal Life (Unit Linked Pension Fds) Ltd				
Exempt Man Fd Acc	334.1	352.[illegible]	[illegible]	[illegible]
Exempt Equity Fd Acc	625.5	658.[illegible]	[illegible]	[illegible]
Exempt Prop Fd Acc	235.6	247.[illegible]	[illegible]	[illegible]
Exempt Intl Fd Acc	497.9	524.[illegible]	[illegible]	[illegible]
Exempt Gilt Fd Acc	306.4	322.[illegible]	[illegible]	[illegible]
Exempt Money Fd Acc	250.9	264.[illegible]	[illegible]	[illegible]

Royal Liver Assurance
Royal Liver Building, Liverpool, L3 1HT

	Bid Price	Offer Price	+ or -	Yield Gross
UK Equity	65.7	69.[illegible]	[illegible]	[illegible]
Global Equity	43.8	46.[illegible]	[illegible]	[illegible]
High Yield	55.9	58.[illegible]	[illegible]	[illegible]
Intl Equity	58.4	61.[illegible]	[illegible]	[illegible]
Fixed Interest	59.9	63.[illegible]	[illegible]	[illegible]
Money	66.9	70.[illegible]	[illegible]	[illegible]
Managed	63.0	66.[illegible]	[illegible]	[illegible]
Pensions				

[illegible]

هكذا من الأصل

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ISLE OF MAN (SIB RECOGNISED)

JERSEY (REGULATED)

LUXEMBOURG (SIB RECOGNISED)

SWITZERLAND (SIB RECOGNISED)

OTHER OFFSHORE FUNDS

ISLE OF MAN (REGULATED)

GUERNSEY

JERSEY (SIB RECOGNISED)

LUXEMBOURG (REGULATED)

MANAGED FUNDS NOTES

CURRENCIES, MONEY AND CAPITAL MARKETS

FOREIGN EXCHANGES

Markets await G-7, US data

THE FOREIGN EXCHANGE markets were in a subdued mood yesterday as dealers waited for important US economic data on Friday and the Group of Seven finance ministers' meeting at the weekend.

The economic reports - producer prices and retail sales - have assumed a greater importance because the market believes it may prompt the US Federal Reserve to ease monetary policy.

Most of the recent figures on output and growth suggest the US economy is slowly recovering from recession. But the latest money supply figures have not been encouraging and with some of the key monetary indicators growing by less than the Federal Reserve's targets there is a widespread belief that there will soon by a reduction in rates.

Last week the dollar was depressed by speculation that rates would be cut after the September employment report was released. In the event, the employment report painted a mixed picture of the economy.

However, even if Friday's numbers are disappointing the Federal Reserve may not order an immediate easing. Mr David Simmonds of Midland Montagu said the Fed will want to wait until the G-7 meeting is over before moving on rates.

In any event, the dollar is expected to remain trapped in a range between DM1.66 and DM1.69. Yesterday the dollar had an upward bias, although that was largely a reaction to its inability to break below DM1.66 last week.

The dollar closed higher at DM1.6795 from DM1.6775; at SFr1.4720 from SFr1.4670; and at FFr5.7175 from FFr5.7125. The dollar's index, calculated by the Bank of England, was unchanged at 64.2.

Speculation that the Group of Seven will agree to a revaluation of the yen led to further gains for the Japanese currency. Most of the action took place in the Tokyo markets where some of the large institutional investors were active buyers.

Many currency dealers also believe that the Japanese monetary authorities are happy to see the yen appreciate before the G-7 meeting in order to avoid accusations at home of giving way to American pressure. A rise in the yen would also be helpful when the Bank of Japan makes its expected half point cut in the official discount rate - currently standing at 5.5 per cent.

The dollar closed lower at Y129.40 from Y129.95, sterling eased to Y224.50 from Y226.25, while the mark slipped to Y76.88-98 from Y77.55.

Within the European Exchange Rate Mechanism, the D-Mark was weaker while the French franc recovered from the political worries of last week.

Sterling was lower as opinion polls continued to put the Labour party ahead of the ruling Conservative party. Sterling closed lower at DM2.9150 from DM2.9175; at $1.7355 from $1.7390; and at FFr9.9225 from FFr9.9350. But it rose to SFr2.5550 from SFr2.5525. Sterling's exchange rate index dropped 0.2 to 90.7.

£ IN NEW YORK

Oct.7	Latest	Previous Close
£ Spot	1.7335-1.7345	1.7365-1.7375
1 month	0.83-0.82pm	0.79-0.77pm
3 months	2.10-2.07pm	2.10-2.07pm
12 months	7.13-7.06pm	7.12-7.05pm

Forward premiums and discounts apply to the US dollar

STERLING INDEX

	Oct.7	Previous
8.30 am	90.8	91.0
9.00 am	90.8	91.0
10.00 am	90.8	91.0
11.00 am	90.8	91.0
Noon	90.8	91.0
1.00 pm	90.8	91.0
2.00 pm	90.8	91.0
3.00 pm	90.8	90.9
4.00 pm	90.7	90.9

CURRENCY MOVEMENTS

Oct 7	Bank of England Index	Morgan** Guaranty Changes %
Sterling	90.7	-20.6
U.S Dollar	64.2	-14.9
Canadian Dollar	106.3	+3.7
Austrian Schilling	109.1	+11.5
Belgian Franc	110.7	-2.4
Danish Krone	108.5	+3.1
D-Mark	117.2	+24.1
Swiss Franc	109.0	+17.9
Dutch Guilder	113.4	+15.6
French Franc	102.1	-13.6
Lira	98.6	-19.8
Yen	143.4	+76.3

Morgan Guaranty changes: average 1980-1982=100. Bank of England Index (Base Average 1985=100). **Rates are for Oct.4

CURRENCY RATES

Oct 7	Bank rate %	Special * Drawing Rights	European † Currency Unit
Sterling	-	0.783539	0.702414
U.S Dollar	5.50	1.37276	1.21904
Canadian $	8.78	1.55355	14.4164
Austrian Sch	7.50	16.0819	14.4065
Belgian Franc	8.00	47.0342	42.2001
Danish Krone	9.50	8.80076	7.89328
D-Mark	7.50	2.28400	2.04860
Dutch Guilder	8.00	2.57804	2.30849
French Franc	10¼	7.79728	6.97595
Italian Lira	11½	1708.23	1530.63
Japanese Yen	5.50	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

* Bank rate refers to central bank discount rates. These are not quoted by the UK, Spain and Ireland. † European Commission Calculations. * All SDR rates are for Oct.4

OTHER CURRENCIES

Oct.7	£	$
[illegible]	[illegible]	[illegible]
Singapore	2.9305 - 2.9375	1.6885 - 1.6905
S.Af (Cm)	4.8855 - 4.8970	2.8145 - 2.8160
S.Af (Fn)	5.3760 - 5.4605	3.0960 - 3.1445
Taiwan	45.95 - 46.00	26.45 - 26.50
U.A.E.	6.3425 - 6.4195	3.6715 - 3.6735

* Selling rate.

EMS EUROPEAN CURRENCY UNIT RATES

	Ecu Central Rates	Currency Amounts Against Ecu Oct 7	% Change from Central Rate	% Spread vs Weakest Currency	Divergence Indicator
Spanish Peseta	133.631	129.424	-3.15	4.46	54
Italian Lira	1538.24	1530.63	-0.49	1.68	27
Belgian Franc	42.4032	42.2001	-0.48	1.66	26
D-Mark	2.05586	2.04860	-0.35	1.53	26
Dutch Guilder	2.31643	2.30849	-0.34	1.52	20
Irish Punt	0.767417	0.766258	-0.15	1.33	10
Danish Krone	7.84195	7.89328	0.65	0.51	-27
Sterling	0.696904	0.702414	0.79	0.38	-16
French Franc	6.89509	6.97595	1.17	0.00	-61

Ecu central rates set by the European Commission. Currencies are in descending relative strength. Percentage changes are for Ecu; a positive change denotes a weak currency. Divergence shows the ratio between two spreads: the percentage difference between the actual market and Ecu central rates for a currency, and the maximum permitted percentage deviation of the currency's market rate from its Ecu central rate.
Adjustment calculated by Financial Times.

POUND SPOT - FORWARD AGAINST THE POUND

Oct 7	Day's spread	Close	One month	% p.a.	Three months	% p.a.
US	1.7305 - 1.7390	1.7350 - 1.7360	0.84-0.82cpm	5.74	2.11-2.08pm	4.83
Canada	1.9580 - 1.9675	1.9580 - 1.9590	0.35-0.27cpm	1.90	1.02-0.89pm	1.95
Netherlands	3.2775 - 3.2900	3.2775 - 3.2875	⅝-⅜cpm	1.83	⅞-⅝pm	0.99
Belgium	59.85 - 60.20	60.05 - 60.15	13-8cpm	2.10	20-13pm	1.10
Denmark	11.2120 - 11.2565	11.2375 - 11.2475	1¾-1orepm	1.47	2¾-1¼pm	0.64
Ireland	1.0880 - 1.0930	1.0895 - 1.0900	0.05-parcpm	0.28	0.13-0.03pm	0.29
Germany	2.9115 - 2.9180	2.9125 - 2.9175	⅜-¼pfpm	1.29	⅝-½pm	0.86
Portugal	249.35 - 251.00	250.00 - 251.00	50-103cdis	-3.66	174-274dis	-3.58
Spain	183.75 - 185.00	183.85 - 184.15	32-39cdis	-2.32	85-95dis	-1.96
Italy	2174.65 - 2182.30	2177.50 - 2178.50	par-2liredis	-0.55	4-7dis	-1.01
Norway	11.3765 - 11.4170	11.4025 - 11.4125	⅞-⅛orepm	0.53	⅛-⅝dis	-0.15
France	9.9175 - 9.9435	9.9175 - 9.9275	1¼-⅞cpm	1.21	2⅜-1¼pm	0.78
Sweden	10.6045 - 10.6410	10.6300 - 10.6400	⅝-parorepm	0.35	⅝-1½dis	-0.42
Japan	224.00 - 225.35	224.00 - 225.00	⅞-¾ypm	4.34	2¼-2pm	3.79
Austria	20.47 - 20.55	20.48 - 20.51	2⅜-1¼gropm	1.06	5¼-1⅞pm	0.63
Switzerland	2.5500 - 2.5600	2.5500 - 2.5600	⅝-½cpm	2.64	1⅝-1¼pm	1.96
Ecu	1.4215 - 1.4260	1.4220 - 1.4230	0.09-0.04cpm	0.55	0.12-0.07pm	0.27

Commercial rates taken towards the end of London trading. Six-month forward dollar 3.92-3.87cpm . 12 Month 7.17-7.07pm.

DOLLAR SPOT - FORWARD AGAINST THE DOLLAR

Oct 7	Day's spread	Close	One month	% p.a.	Three months	% p.a.
UK†	1.7305 - 1.7390	1.7350 - 1.7360	0.84-0.82cpm	5.74	2.11-2.08pm	4.83
Ireland†	1.5905 - 1.5935	1.5905 - 1.5915	0.72-0.67cpm	5.24	1.92-1.82pm	4.70
Canada	1.1295 - 1.1310	1.1295 - 1.1305	0.35-0.38cdis	-3.88	0.80-0.85dis	-2.92
Netherlands	1.8880 - 1.8950	1.8910 - 1.8920	0.69-0.72cdis	-4.47	1.82-1.86dis	-3.89
Belgium	34.50 - 34.70	34.60 - 34.70	11.80-13.80cdis	-4.43	31.00-36.00dis	-3.87
Denmark	6.4525 - 6.4935	6.4750 - 6.4800	2.50-2.80oredis	-4.91	6.65-7.25dis	-4.29
Germany	1.6755 - 1.6825	1.6790 - 1.6800	0.63-0.64pfdis	-4.54	1.68-1.70dis	-4.03
Portugal	144.15 - 144.35	144.25 - 144.35	108-115cdis	-9.27	295-310dis	-8.39
Spain	106.05 - 106.35	106.15 - 106.25	71-77cdis	-8.36	182-192dis	-7.04
Italy	1252.75 - 1256.75	1254.75 - 1255.25	6.60-7.10liredis	-6.55	18.10-19.10dis	-5.93
Norway	6.5500 - 6.5750	6.5700 - 5.5750	2.95-3.25oredis	-6.13	7.80-8.30dis	-5.30
France	5.7100 - 5.7290	5.7150 - 5.7200	2.19-2.24cdis	-4.65	5.80-5.90dis	-4.09
Sweden	6.1050 - 6.1345	6.1250 - 6.1300	2.90-3.15oredis	-5.92	7.85-8.30dis	-5.27
Japan	129.20 - 130.00	129.35 - 129.45	0.18-0.19ydis	-1.72	0.35-0.36dis	-1.10
Austria	11.8000 - 11.8360	11.8225 - 11.8275	4.45-4.90grodis	-4.74	11.60-12.80dis	-4.13
Switzerland	1.4660 - 1.4745	1.4715 - 1.4725	0.38-0.40cdis	-3.18	1.00-1.03dis	-2.76
Ecu	1.2180 - 1.2215	1.2195 - 1.2205	0.56-0.51cpm	5.26	1.46-1.38pm	4.66

Commercial rates taken towards the end of London trading. † UK, Ireland and ECU are quoted in US currency. Forward premiums and discounts apply to the US dollar and not to the individual currency.

EURO-CURRENCY INTEREST RATES

Oct 7	Short term	7 Days notice	One Month	Three Months	Six Months	One Year
Sterling	10⅞ - 10¾	10½ - 10⅜	10½ - 10⅜	10⅜ - 10¼	10⅜ - 10¼	10¼ - 10⅛
US Dollar	5⅛ - 5⅛	5⅜ - 5⅛	5¼ - 5⅛	5⅜ - 5⅜	5⅜ - 5⅜	5⅜ - 5⅝
Can. Dollar	9¼ - 8⅞	9 - 8⅞	8½ - 8⅜	8⅛ - 8	8 - 7⅞	8 - 7⅞
Dutch Guilder	9¼ - 9⅛	9¼ - 9⅛	9¼ - 9⅛	9⅜ - 9⅜	9⅜ - 9¼	9⅜ - 9⅜
Swiss Franc	7⅞ - 7½	8 - 7⅞	8⅜ - 8⅛	8¼ - 8⅛	8¼ - 8⅛	8⅛ - 7⅞
D-Mark	9⅜ - 9⅛	9⅜ - 9⅛	9¼ - 9⅛	9⅜ - 9⅜	9⅜ - 9⅜	9⅜ - 9⅜
French Franc	9¼ - 9⅛	9¼ - 9⅛	9⅜ - 9⅜	9⅜ - 9⅜	9⅜ - 9⅜	9½ - 9⅜
Italian Lira	12 - 10	11½ - 10¾	11⅛ - 10⅞	11½ - 11	11⅝ - 11¼	11¾ - 11½
Belgian Franc	9¼ - 9⅛	9¼ - 9⅛	9¼ - 9⅛	9⅜ - 9¼	9½ - 9⅜	9½ - 9⅜
Yen	6⅝ - 6⅞	6⅜ - 6⅝	6⅜ - 6⅝	6⅜ - 6¼	6⅜ - 6¼	6⅛ - 6
Danish Krone	9⅞ - 9½	9⅞ - 9⅝	9⅞ - 9⅝	9⅜ - 9⅜	9⅞ - 9⅝	9⅜ - 9⅜
Asian $Sing	5⅞ - 5⅜	5⅜ - 5⅛	5⅜ - 5⅛	5⅝ - 5½	5⅝ - 5½	5⅝ - 5½

Long term Eurodollars: two years 6¼-6⅛ per cent; three years 6⅞-6⅝ per cent; four years 7⅛-7 per cent; five years 7⅜-7¼ per cent nominal. Short term rates are call for US Dollars and Japanese Yen; others, two days' notice.

EXCHANGE CROSS RATES

Oct.7	£	$	DM	Yen	F Fr.	S Fr.	H Fl.	Lira	C$	B Fr.	ECU
£	1	1.736	2.915	224.5	9.923	2.555	3.283	2178.	1.959	60.10	1.423
$	0.576	1	1.679	129.3	5.716	1.472	1.891	1255	1.128	34.62	0.820
DM	0.343	0.596	1	77.02	3.404	0.877	1.126	747.2	0.672	20.62	0.488
YEN	4.454	7.733	12.98	1000.	44.20	11.38	14.62	9702	8.726	267.7	6.339
F Fr.	1.008	1.749	2.938	226.2	10.	2.575	3.308	2195	1.974	60.57	1.434
S Fr.	0.391	0.679	1.141	87.87	3.884	1	1.285	852.4	0.767	23.52	0.557
H Fl.	0.305	0.529	0.888	68.38	3.023	0.778	1	663.4	0.597	18.31	0.433
Lira	0.459	0.797	1.338	103.1	4.556	1.173	1.507	1000.	0.899	27.59	0.653
C$	0.510	0.886	1.488	114.6	5.065	1.304	1.676	1112	1	30.68	0.726
B Fr.	1.664	2.889	4.850	373.5	16.51	4.251	5.463	3624	3.260	100.	2.368
ECU	0.703	1.220	2.048	157.8	6.973	1.796	2.307	1531	1.377	42.23	1

Yen per 1,000: French Fr. per 10: Lira per 1,000: Belgian Fr. per 100.

FINANCIAL FUTURES AND OPTIONS

LIFFE LONG GILT FUTURES OPTIONS — [illegible]

LIFFE US TREASURY BOND FUTURES OPTIONS — [illegible]

LIFFE BUND FUTURES OPTIONS — [illegible]

LIFFE EUROMARK OPTIONS — [illegible]

LIFFE EURODOLLAR OPTIONS — [illegible]

LIFFE SHORT STERLING OPTIONS — [illegible]

LONDON (LIFFE) — [illegible]

CHICAGO — [illegible]

PARIS — [illegible]

ECU BOND (MATIF)

December	106.24	106.40	+0.30	106.46	106.24	9.05	5,451
March	-	106.42	+0.30	-	-	9.04	270

Estimated volume 2,961 Total Open Interest 5,721

OPTION ON LONG-TERM FRENCH BOND (MATIF)

Strike	Calls December	Calls March	Calls June	Puts December	Puts March	Puts June
105	1.99	-	-	0.13	0.47	-
106	1.20	-	-	0.34	0.75	-
107	0.61	1.13	1.58	0.70	1.16	-
108	0.26	0.72	-	-	-	-
Open Int	101,410	41,685	2,240	79,319	36,355	8,573

Estimated volume 15,560 Total Open Interest 269,582

POUND - DOLLAR

FT FOREIGN EXCHANGE RATES

Spot	1-mth.	3-mth.	6-mth.	12-mth.
1.7355	1.7272	1.7145	1.6965	1.6643

BASE LENDING RATES

	%		%		%
Adam & Company	10.5	Credit Lyonnais	10.5	Midland Bank	10.5
Allied Trust Bank	10.5	Cyprus Popular Bk	10.5	Mount Banking	10.5
AIB Bank	10.5	Dunbar Bank PLC	10.5	NatWestminster	10.5
● Henry Ansbacher	10.5	Duncan Lawrie	10.5	Northern Bank Ltd	10.5
B & C Merchant Bank	10.5	Equatorial Bank plc	10.5	Nykredit Mortgage Bank	11
Bank of Baroda	10.5	Exeter Bank Limited	11	Provincial Bank PLC	14
Banco Bilbao Vizcaya	10.5	Financial & Gen. Bank	11	Roxburghe Bank Ltd.	11.5
Bank of Cyprus	10.5	First National Bank Plc.	14	Royal Bk of Scotland	10.5
Bank of Ireland	10.5	● Robert Fleming & Co.	10.5	● Smith & Williamson Secs.	10.5
Bank of India	10.5	Robert Fraser & Ptnrs.	11	Standard Chartered	10.5
Bank of Scotland	10.5	Girobank	10.5	TSB	10.5
Banque Belge Ltd	10.5	● Guinness Mahon	10.5	Unibank plc	10.5
Barclays Bank	10.5	● Hambros Bank	10.5	● United Bk of Kuwait	10.5
Benchmark Bank	11	Hampshire Trust Plc	13.5	Unity Trust Bank Plc	10.5
Brit Bk of Mid East	10.5	Heritable & Gen Inv Bnk.	10.5	Western Trust	10.5
● Brown Shipley	10.5	● Hill Samuel	10.5	Westpac Bank Corp.	10.5
CL Bank Nederland	10.5	C. Hoare & Co.	10.5	Whiteaway Laidlaw	10.5
Citibank NA	10.5	Hongkong & Shanghai	10.5	Yorkshire Bank	10.5
City Merchants Bank	10.5	● Leopold Joseph & Sons	10.5		
Clydesdale Bank	10.5	Lloyds Bank	10.5		
Co-operative Bank	10.5	Meghraj Bank Ltd	10.5		
Coutts & Co	10.5	McDonnell Douglas Bnk.	10.5		

● Members of British Merchant Banking & Securities Houses Association.

MONEY MARKETS

Stable UK rates

THE LONDON money market was quiet yesterday with period rates little changed from Friday's close as dealers continued to believe that there will no immediate change in UK interest rates.

The key three months interbank rate was unchanged at 10$\frac{5}{16}$-¼ per cent.

Although much of the day's economic news was positive it generated little enthusiasm in the markets. The latest Confederation of British Industry survey indicated that pay settlements are moderating, while the August retail sales report was revised to show only a 1.2 per cent decline from 1.4 per cent.

The Conservative party conference, which begins today, and the September inflation figures on Friday may be of greater interest. But with no rate cut anticipated until later in the year the sterling markets could be locked into tight ranges for much of the week.

Sterling's slight weakness within the Exchange Rate Mechanism is also expected to underpin market rates and further postpone any rate cut.

The futures market still expects base rates to be reduced to 10 per cent from the current 10.5 per cent this year.

This was reflected in yesterday's prices. December short sterling contract rose 3 basis point to 90.14, implying an interest rate of 9.86 per cent at the end of that month.

The market was adequately supplied with short-term funds yesterday and this caused overnight money rates to dip to 6 per cent before recovering to close little changed at 10⅜ per cent.

The abundance of liquidity was revealed in the Bank of England's daily market forecast, which anticipated that the market would be in surplus (£50m) for the first time in eighteen months.

But senior money dealers said the surplus carried no particular significance and came from a coincidence of technical money market factors such as the £520m fall in the note circulation.

With the large flow of tax payments into the Exchequer having dried up and the Bank of England unwilling to mop up the excess liquidity the cash remained on brokers books and caused the fall in overnight rates.

Unfortunately the one talking point of the day may have just been a statistical error: money dealers believe there is a £50m margin of error on the Bank of England's forecasts.

UK clearing bank base lending rate 10.5 per cent from September 4, 1991

FT LONDON INTERBANK FIXING

(11.00 a.m. Oct. 7) 3 months US dollars		6 months US Dollars	
bid 5$\frac{5}{16}$	offer 5$\frac{7}{16}$	bid 5$\frac{5}{16}$	offer 5$\frac{7}{16}$

The fixing rates are the arithmetic means rounded to the nearest one-sixteenth, of the bid and offered rates for $10m quoted to the market by five reference banks at 11.00 a.m. each working day. The banks are National Westminster Bank, Bank of Tokyo, Deutsche Bank, Banque National de Paris and Morgan Guaranty Trust.

MONEY RATES

NEW YORK — Treasury Bills and Bonds

Lunchtime					
Prime rate	8	One month	5.09	Three year	6.16
Broker loan rate	7½	Two month	5.49	Four year	6.33
Fed.funds	5¼	Three month	5.15	Five year	6.79
Fed.funds at intervention	-	Six month	5.26	Seven year	7.15
		One year	5.33	10-year	7.39
		Two year	5.90	30-year	7.79

Oct.7	Overnight	One Month	Two Months	Three Months	Six Months	Lombard Intervention
Frankfurt	9.05-9.15	9.00-9.15	9.05-9.20	9.20-9.35	9.25-9.40	9.25
Paris	9⅜-9⅝	9⅜-9⅝	9⅜-9⅝	9⅜-9½	9⅜-9½	9.25
Zurich	7⅝-7⅞	8-8¼	-	8-8¼	-	-
Amsterdam	9.06-9.12	9.12-9.18	-	9.24-9.29	-	-
Tokyo	6⅜-6⅝	6⅜-6⅝	-	6⅝-6⅝	-	-
Milan	10⅞-11	11⅛-11⅜	-	11⅜-11⅝	-	-
Brussels	9.12-9.25	9⅜-9⅝	-	9⅜-9⅝	-	-
Dublin	10-10⅛	10⅛-10⅜	10⅜-10⅝	10¼-10⅜	10¼-10⅜	-

LONDON MONEY RATES

Oct 7	Overnight	7 days notice	One Month	Three Months	Six Months	One Year
Interbank Offer	10⅜	10⅜	10⅜	10⅜	10⅜	10⅜
Interbank Bid	6	10¼	10¼	10¼	10¼	10¼
Sterling CDs	-	-	10$\frac{5}{16}$	10¼	10⅛	10⅛
Local Authority Deps.	10	10⅜	10⅜	10¼	10⅛	10
Local Authority Bonds	-	-	-	-	-	-
Discount Mkt Deps	9⅞	10⅜	-	-	-	-
Company Deposits	-	-	10½	10⅜	10⅜	10¼
Finance House Deposits	-	-	10½	10⅜	10⅜	10¼
Treasury Bills (Buy)	-	-	10⅜	9⅞	9¾	-
Bank Bills (Buy)	-	-	10⅜	9⅞	9¾	-
Fine Trade Bills (Buy)	-	-	-	-	-	-
Dollar CDs	-	-	5.23	5.35	5.35	5.50
SDR Linked Dep. Offer	-	-	7⅛	7⅛	7⅛	7⅛
SDR Linked Dep. Bid	-	-	7	7	7	7¼
ECU Linked Dep. Offer	-	-	9⅞	10	10	9⅞
ECU Linked Dep. Bid	-	-	9¾	9⅞	9⅞	9¾

Treasury Bills (sell), one-month 10⅛ per cent; three months 9⅞ per cent; six months 9⅝ per cent; Bank Bills (sell): one-month 10¼ per cent; three months 9$\frac{15}{16}$ per cent; Treasury Bills; Average tender rate of discount 9.7490 p.c. ECGD Fixed Rate Sterling Export Finance. Make up day September 30 ,1991 . Agreed rates for period Oct.26, 1991 to November 25 , 1991, Scheme I: 11.70 p.c., Schemes II & III: 11.64 p.c. Reference rate for period August 31, 1991 to September 30 , 1991, Scheme IV&V: 10.351 p.c. Local Authority and Finance Houses seven days' notice, others seven days' fixed. Finance Houses Base Rate 11 from September 1 , 1991: Bank Deposit Rates for sums at seven days notice 4 per cent. Certificates of Tax Deposit (Series 6); Deposit £100,000 and over held under one month 7 per cent; one-three months 9½ per cent; three-six months 9 per cent; six-nine months 9 per cent; nine-twelve months 9 per cent; Under £100,000 7 per cent from Sept 5,1991 , Deposits withdrawn for cash 5 per cent.

MONEY MARKET FUNDS

Money Market Trust Funds

[illegible]

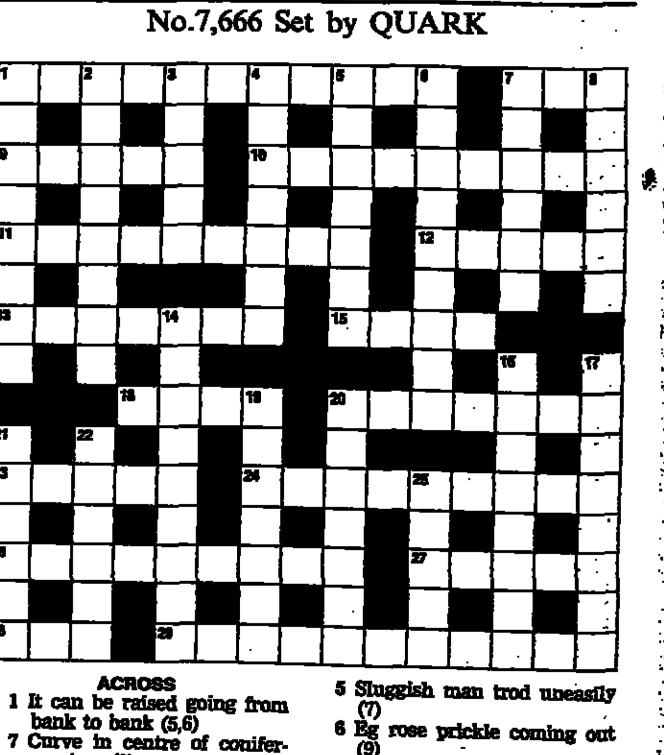
Money Market Bank Accounts

[illegible]

JOTTER PAD

CROSSWORD

No.7,666 Set by QUARK



ACROSS

1 It can be raised going from bank to bank (5,6)
7 Curve in centre of coniferous tree (3)
9 Wide film actor? (5)
10 Grumble at way-in effected by joiner? (9)
11 Arrogant one spilt the port (9)
12 The visitor made an estimate, it's said (5)
13 Empty sty with special lock inside, tight (7)
15 River flowing back in teeny trickle (4)
18 Member of junior team could produce a shot (4)
20 One living in fantasy world – RE armed after battle! (7)
23 Dislike of platform with no piano (5)
24 Change about which one can be right, they say (9)
26 Flavouring used captivates excited Irma (9)
27 Magnificent old coin (5)
28 One member teasing child (3)
29 Successful mountaineering club? (4,7)

DOWN

1 Edit, ie start English paper (8)
2 Current mode of transport? (5-3)
3 One encircled by girl's lasso (5)
4 Guide loses first two in clergyman's house (7)
5 Sluggish man trod uneasily (7)
6 Eg rose prickle coming out (9)
7 Choir piece with a New Testament edge (6)
8 Company books eastern animal (wild) (6)
14 Springer gets a month (could be given to prisoner) (9)
16 "Acquiescent" – last word to fit (8)
17 Provided by leaves well before the fall (8)
19 Browning's punishment? (7)
20 Indicates Dee's not flowing (7)
21 A tree going to pot? (6)
22 Result of many on a crash course (4-2)
25 Kind of grass to produce anxiety (5)

Solution to Puzzle No.7,665

ADVENTURE NOTED
VERTU DEPENDANT
LITERATURE SPAR
COBBLES SHUTTLE
AVERTED CABARET
ADAM FORMMASTER
TROUSSEAU TABOO
RATED SHEERNESS

هكذا منه الأصل

WORLD STOCK MARKETS

AUSTRIA / BELGIUM/LUXEMBOURG / DENMARK / FINLAND / FRANCE / JAPAN / FRANCE (continued) / GERMANY / GERMANY (continued) / NETHERLANDS / ITALY / NORWAY / SPAIN / SWEDEN / SWEDEN (continued) / SWITZERLAND / SOUTH AFRICA / AUSTRALIA / AUSTRALIA (continued) / HONG KONG / MALAYSIA / SINGAPORE

[illegible]

Price data supplied by Telekurs.

CANADA

TORONTO

3:00 pm prices October 7

Quotations in cents unless marked $

[illegible]

Total Sales 9,028,800 shares

MONTREAL

3:00 pm prices October 7

[illegible]

INDICES

NEW YORK

DOW JONES	Oct 4	Oct 3	Oct 2	Oct 1	1991 HIGH	1991 LOW	Since compilation HIGH	Since compilation LOW
φIndustrials	2961.76	2984.79	3012.52	3018.34	3055.23 (28/8)	2470.30 (9/1)	3055.23 (28/8/91)	41.22 (2/7/32)
Home Bonds	97.30	97.14	97.10	97.20	97.30 (4/10)	91.30 (16/1)	97.30 (4/10/91)	54.99 (1/10/81)
Transport	1187.59	1198.43	1201.79	1195.87	1241.89 (3/6)	894.30 (7/1)	1532.01 (5/9/89)	12.32 (8/7/32)
Utilities	212.63	213.19	213.63	212.63	220.89 (16/4)	195.17 (10/7)	236.23 (2/1/90)	10.50 (8/4/32)

φDay's High 3007.16 (3021.24) Low 2956.17 (2972.50)

STANDARD AND POOR'S

	Oct 4	Oct 3	Oct 2	Oct 1	1991 HIGH	1991 LOW	Since compilation HIGH	Since compilation LOW
Composite ‡	381.25	384.47	388.26	389.20	396.64 (28/8)	311.49 (9/1)	396.64 (28/8/91)	4.40 (1/6/32)
Industrials	450.59	454.03	458.49	459.86	472.01 (29/8)	364.90 (9/1)	472.01 (29/8/91)	3.62 (21/6/32)
Financial	30.84	31.15	31.77	31.80	32.24 (14/8)	21.96 (9/1)	35.24 (9/10/89)	8.64 (1/10/74)
NYSE Composite	210.22	211.73	213.60	214.01	217.17 (28/8)	170.97 (9/1)	217.17 (28/8/91)	4.46 (25/4/42)
Amex Mkt. Value	371.47	373.02	375.56	374.95	374.95 (1/10)	296.72 (14/1)	397.03 (10/10/89)	29.31 (9/12/72)
NASDAQ Composite	520.40	520.51	526.33	528.51	528.51 (1/10)	355.75 (14/1)	528.51 (1/10/91)	54.87 (31/10/72)

	Sep 27	Sep 20	Sep 13	year ago (approx.)
Dow Industrial Div. Yield	3.08	3.04	3.07	4.14

	Oct 2	Sep 25	Sep 18	year ago (approx.)
S & P Industrial div. yield	2.74	2.73	2.73	3.49
S & P Indl. P/E ratio	21.14	21.14	21.15	14.55

NEW YORK ACTIVE STOCKS

Friday	Stocks traded	Closing price	Change on day
RJR Nabisco	7,076,200	10¾	- ¼
Amer Express	6,272,700	21¼	- 1¼
Chrysler	2,913,700	10½	+ ⅛
Amer T & T	2,869,700	36¼	- ⅞
Global Marine	2,387,700	3¼	+ ¼
Natl Med Ent	1,841,300	20¼	- ⅝
Advanced Micro	1,666,700	9	+ ⅜
Telefonica	1,469,500	33½	+ ½
IBM	1,317,100	98¼	- ⅝
Upjohn	1,282,600	43⅝	- ⅝

TRADING ACTIVITY

† Volume Millions	Oct 4	Oct 3	Oct 2
New York SE	163.920	174.230	169.290
Amex	10.956	12.867	13.108
NASDAQ	151.232	179.367	179.610
NYSE			
Issues Traded	2,087	2,075	2,120
Rises	655	506	773
Falls	896	1,060	833
Unchanged	536	509	514
New Highs	88	94	156
New Lows	24	23	16

CANADA

TORONTO	Oct 4	Oct 3	Oct 2	Oct 1	1991 HIGH	1991 LOW
Metals & Minerals	2779.61	2804.84	2836.52	2856.23	3299.99 (18/7)	2632.06 (9/1)
Composite	3378.87	3393.28	3393.59	3395.26	3582.07 (7/6)	3161.95 (15/1)
MONTREAL Portfolio	1789.47	1799.17	1800.72	1803.43	1903.86 (7/6)	1686.89 (9/1)

Base values of all indices are 100 except NYSE All Common – 50; Standard and Poor's – 10; and Toronto Composite and Metals – 1000. Toronto indices based 1975 and Montreal Portfolio 4/1/83. † Excluding bonds. ‡ Industrial, plus Utilities, Financial and Transportation. (c) Closed. (u) Unavailable.

	Oct 7	Oct 4	Oct 3	Oct 2	1991 HIGH	1991 LOW
AUSTRALIA						
All Ordinaries (1/1/80)	1579.2	1587.0	1585.8	1581.8	1591.3 (7/8)	1204.5 (16/1)
All Mining (1/1/80)	640.2	649.2	651.9	652.7	707.2 (24/7)	561.6 (16/1)
AUSTRIA						
Credit Aktien (30/12/84)	445.14	451.14	455.84	457.47	534.81 (16/4)	390.84 (15/1)
BELGIUM						
BEL20 (1/1/91)	1101.01	1102.43†	1094.47	1088.08	1212.15 (17/4)	917.59 (17/1)
DENMARK						
Copenhagen SE (3/1/83)	359.40	361.47	364.40	365.73	380.04 (2/8)	302.26 (8/1)
FINLAND						
HEX General (28/12/90)	852.8	855.1	848.4	843.3	1186.9 (8/4)	843.3 (2/10)
FRANCE						
CAC General (31/12/82)	490.86	491.60	495.90	497.62	497.62 (2/10)	394.88 (15/1)
CAC 40 (31/12/87)	1843.58	1851.91	1867.11	1878.25	1887.29 (1/10)	1425.26 (15/1)
GERMANY						
FAZ Aktien (31/12/58)	658.84	661.15	(c)	661.91	717.43 (17/6)	570.48 (15/1)
Commerzbank (1/12/53)	1849.4	1845.0	(c)	1855.3	2035.2 (31/5)	1612.5 (15/1)
DAX (30/12/87)	1588.66	1601.73	(c)	1607.32	1715.80 (11/6)	1311.82 (16/1)
HONG KONG						
Hang Seng Bank (31/7/64)	4060.37	4067.69	4093.41	4062.87	4093.41 (3/10)	2984.01 (16/1)
IRELAND						
ISEQ Overall (4/1/88)	1426.17	1438.47	1435.43	1435.21	1520.65 (15/3)	1114.86 (25/1)
ITALY						
Banca Com. Ital. (1972)	535.18	539.03	544.60	548.33	619.38 (3/6)	486.26 (29/1)
JAPAN						
Nikkei (16/5/49)	24330.83	24596.98	24711.44	24375.11	27146.91 (18/3)	21456.76 (19/8)
Tokyo SE (Topix) (4/1/68)	1872.38	1883.32	1882.74	1862.04	2028.85 (18/3)	1625.00 (17/1)
2nd Section (4/1/68)	2892.63	2898.56	2907.52	2904.22	3423.45 (10/5)	2473.52 (24/1)
MALAYSIA						
KLSE Composite (4/4/86)	508.25	513.11	518.20	521.77	635.02 (29/5)	470.41 (16/1)
NETHERLANDS						
CBS Ttl.Rtn.Gen.(End 1983)	274.2	275.7	275.7	276.9	284.8 (5/6)	221.4 (16/1)
CBS All Shr (End 1983)	193.2	194.0	194.8	194.4	203.1 (5/6)	162.3 (16/1)
NORWAY						
Oslo SE (Ind) (2/1/83)	729.42	740.28	742.80	750.41	793.53 (26/8)	610.45 (21/1)
PHILIPPINES						
Manila Comp (2/1/85)	998.99	988.27	960.31	950.40	1183.40 (29/5)	582.64 (10/1)
SINGAPORE						
SES All-Singapore (2/4/75)	372.56	373.79	374.69	375.44	422.43 (26/4)	315.07 (16/1)
SOUTH AFRICA						
JSE Gold (28/9/78)	1196.04	1168.0	1160.8	1140.0	1469.0 (5/7)	971.0 (25/2)
JSE Industrial (28/9/78)	4078.04	4061.0	4048.0	3983.0	4237.0 (10/9)	2829.0 (16/1)
SOUTH KOREA**						
Korea Comp Ex. (4/1/80)	713.88	720.53	(c)	705.18	763.10 (6/8)	590.57 (22/6)
SPAIN						
Madrid SE (30/12/85)	266.96	265.31	267.41	269.02	289.22 (18/3)	213.78 (14/1)
SWEDEN						
Affärsvärlden Gen. (1/2/37)	1018.0	1029.3	1039.1	1026.4	1149.8 (11/7)	808.4 (8/1)
SWITZERLAND						
Swiss Bank Ind. (31/12/58)	741.0	744.6	743.6	744.4	769.2 (29/8)	590.4 (14/1)
SBC General (1/4/87)	612.2	615.1	614.4	614.5	638.0 (31/5)	487.1 (14/1)
TAIWAN**						
Weighted Price (30/6/66)	4817.65	4742.71	4726.15	4830.13	6305.22 (9/5)	3316.26 (15/1)
THAILAND						
Bangkok SET (30/4/75)	645.56	664.47	643.99	654.69	908.13 (19/4)	582.48 (16/1)
WORLD						
M.S. Capital Intl.(1/1/70) (S)	517.8*	520.6	522.3	521.5	529.2 (17/4)	439.1 (16/1)

**Saturday October 5: Taiwan Weighted Price: 4796.66. Korea Comp Ex. 712.52

‡ Subject to official recalculation. †- Correction. *Calculated at 15.00 GMT.

Base values of all indices are 100 except: BEL20, HEX General, ISEQ Overall and DAX – 1,000, JSE Gold – 255.7, JSE 26 Industrials – 264.3 and Australia All Ordinary and Mining – 500; (c) Closed. (u) Unavailable.

TOKYO - Most Active Stocks

Monday 7 October 1991

	Stocks Traded	Closing Prices	Change on day		Stocks Traded	Closing Prices	Change on day
Topy Ind	14.4	850	+63	Kyowa Hakko	4.2	1,420	+10
Sato Kogyo	9.5	1,450	+60	Nissan Chemical	3.9	1,010	-20
Meiji Seika	4.7	1,220	-40	Chugoku Marine	3.8	1,060	-40
Tokyo Gas	4.7	615	+1	Okumura	3.7	1,530	+40
Nishimatsu Cons	4.7	1,260	+40	Toyo Tire	3.6	855	+7

NOTES – Prices on this page are as quoted on the individual exchanges and are last traded prices. (u) Unavailable. § Dealings suspended. xd Ex dividend. xc Ex scrip issue. xr Ex rights. xa Ex all.

3:15 pm prices October 7

NEW YORK STOCK EXCHANGE COMPOSITE PRICES

1991 High	Low	Stock	Div.	Yld.	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
16⅞	9¼	AAR Corp	0.48	0.04	17	167	13	12⅞	13	+⅛
18¾	14½	A L Labs A x	0.18	0.01	19	107	18	17⅞	17⅞	-⅛
65¾	40⅞	AMP Inc	1.44	0.03		162066	49	48½	48¾	-⅛
68⅞	44¼	AMR				102593	65⅛	64⅝	64¾	
2⅝	1	ARX			1	76	1⅝	1½	1½	
56	41½	ASA	3.60	0.07	14	301	50¼	49½	49½	-⅞
56⅞	38⅛	Abbott Lab x	1.00	0.02	22	3056	53¾	53	53½	+½
14⅞	9⅞	Abitibi Pr	0.50	0.04	24	5	13⅛	13⅛	13⅛	
11⅝	10⅝	ACM Gvt In x	1.28	0.11		620	11⅜	11¼	11⅜	
9¾	8¼	ACM GvOpp x	1.01	0.10		111	u9¾	9½	9¾	+¼
9⅛	8¼	ACM Gvt Sp x	1.01	0.11		832	u9⅜	9¼	9⅛	
11	9⅞	ACM Gvt In x	1.28	0.12		581	10⅞	10¾	10⅞	+⅛
9	7⅞	ACM Man x	1.01	0.12		405	8⅞	8⅝	8¾	
12⅞	11½	ACM Mangd x	1.35	0.10		303	12¾	12½	12¾	+⅛
7½	4¼	Acme Cleve x	0.40	0.06	16	4	6⅛	6⅛	6⅛	-⅛
6	3⅞	Acme Elect			2	3	4	4	4	
40	22⅞	Acuson			22	2635	33⅝	33¼	33½	-⅛
19⅛	14¾	Adams Expr	0.73	0.04	0	65	18⅞	18¾	18⅞	
20⅛	17½	Adobe12Pf	2.40	0.12		3	19⅝	19⅝	19⅝	
9¾	6⅞	Adobe Res			46	116	7	7	7	-⅛
38⅞	18	Ad Micro				z100	31½	31½	31½	
14¾	4⅞	Ad Micro P	3.00	0.33	14	2494	9⅛	9	9	
8⅛	2⅛	Advest Grp	0.16	0.04	6	6	3½	3½	3½	
40⅛	31⅞	Aetna Li x	2.76	0.08	7	2714	34½	34⅛	34⅜	-⅛
10⅝	6⅝	Aflil A	0.24	0.03	45	482	8	7⅞	7⅞	-⅛
20⅞	12	Ahmanson	0.88	0.05	10	789	16⅞	16½	16½	-⅜
14⅞	2⅞	Aileen Inc			14	341	14¼	13⅞	14¼	
74⅛	51⅞	Air Pr Chm x	1.56	0.02	14	462	67	66⅝	66¾	-⅛
30	16⅝	Airbns Frt	0.30	0.01	17	60	25⅞	25⅝	25⅝	-⅜

- B -

- C -

- D -

- E -

- F -

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NYSE COMPOSITE PRICES

Continued from previous page

1991 High	1991 Low	Stock	Div.	Yld.	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
25⅝	22¼	RoyBkScot	2.61	0.11	-	233	25¼	24⅞	25⅛	+⅛
84¾	73¼	RylDutch	4.23	0.05	10	2271	80⅝	80	80¼	+¼
11	7½	Royce Val				204	9¼	9⅛	9⅛	-⅛
39¼	27	Rubbermaid	0.60	0.01	29	300	38	36¼	38	+¼
16⅝	13½	Ruddick	0.39	0.02	13	130	15⅞	15½	15¾	+¼
18⅜	13	RussBerrie	0.60	0.04	13	5	16¼	16¼	16¼	
7⅛	2¼	Russ Togs	0.20	0.07	0	37	3	2¾	2¾	-¼
30⅝	19⅛	Russell Cp	0.32	0.01	23	52	29⅛	28⅞	28⅞	-⅛
21⅝	14	Ryder Syst	0.60	0.03	28	242	18⅛	18	18⅛	-⅛
25¼	13¾	Ryland Grp	0.60	0.03	36	44	23⅛	22⅝	22⅝	-¼

- S -

1991 High	1991 Low	Stock	Div.	Yld.	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
26⅞	20⅛	S Atlz Rt x	2.08	0.08	19	139	25⅛	24¾	25	-⅛
16½	11½	SCOR US Cp x	0.24	0.02	9	6	15⅝	15⅝	15⅝	+⅛
37	20¾	SPS Techno	1.28	0.05	11	61	25¾	25	25	
2⅛	¾	Saatchi&S	0.19	0.25	0	1629	⅞	d¾	¾	-⅛
13	11	Sabine Rt	1.32	0.11	7	93	12¼	12⅛	12¼	
9⅞	6⅞	Safecard	0.15	0.02	7	293	8½	8¼	8¼	-⅛
13⅝	8⅝	Safeg'd Sc			3	9	12⅛	12	12	-⅛

- X - Y - Z -

1991 High	1991 Low	Stock	Div.	Yld.	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
62⅛	35¼	Xerox	3.00	0.05	10	2846	61¼	60⅝	60⅞	-½
51½	43¼	Xerox4.125				21	50¼	50¼	50¼	
23½	14⅛	Xtra 1.94				150	23¼	23	23¼	+⅛
27¾	14¾	Xtra Corp	0.72	0.03	88	212	26⅞	26⅜	26½	-⅛
25½	21⅛	Yankee Egy	1.60	0.06	12	32	u25½	25¼	25½	+¼
1½	⅞	Zapata			2	305	⅞	⅞	⅞	-⅛
9⅝	5¼	ZenithElec			1	763	5⅞	d5¼	5⅞	
18½	12	Zenith Nat x	1.00	0.06	95	20	16	16	16¼	
6¼	4½	Zenix Inc	0.84	0.13		118	u6⅝	6¼	6⅜	+¼
15⅛	10⅞	Zero Corp	0.40	0.03	15	66	13⅝	13	13⅛	-⅜
41⅛	29½	Zurn Ind	0.88	0.03	18	377	33⅝	33¼	33½	+¼
13½	10⅛	Zweig Fund	1.16	0.09		312	12⅝	12⅝	12¾	+⅛
10⅝	8½	Zweig Totl x	0.96	0.09		334	10¼	10⅛	10⅛	-⅛

Price data supplied by Telekurs.

Sales figures are unofficial. Yearly highs and lows reflect the previous 52 weeks plus the current week, but not the latest trading day. Where a split or stock dividend amounting to 25 percent or more has been paid, the year's high-only range and dividend are shown for the new stock only. Unless otherwise noted, rates of dividend are annual disbursements based on the latest declaration.

a-dividend also xtra(s). b-annual rate of dividend plus stock dividend. c-liquidating dividend. cld-called. d-new yearly low. e-dividend declared or paid in preceding 12 months. g-dividend in Canadian funds, subject to 15% non-residence tax. i-dividend declared after split-up or stock dividend. j-dividend paid this year, omitted, deferred, or no action taken at latest dividend meeting. k-dividend declared or paid this year, an accumulative issue with dividends in arrears. n-new issue in the past 52 weeks. The high-low range begins with the start of trading. nd-next day delivery. P/E price-earnings ratio. r-dividend declared or paid in preceding 12 months, plus stock dividend. s-stock split. Dividends begin with date of split. sls-sales. t-dividend paid in stock in preceding 12 months, estimated cash value on ex-dividend or ex-distribution date. u-new yearly high. v-trading halted. vi-in bankruptcy or receivership or being reorganised under the Bankruptcy Act, or securities assumed by such companies. wd-distributed. wi-when issued. ww-with warrants. x-ex-dividend or ex-rights. xdis-ex-distribution. xw-without warrants. y-ex-dividend and sales in full. yld-yield. z-sales in full.

AMEX COMPOSITE PRICES

3:00 pm prices October 7

Stock	Div.	P/E	Sls 100s	High	Low	Close	Chng
Pegasus G		7	186	11⅜	11¼	11⅜	+⅛
Perini		6	29	9⅝	9¼	9¼	-¼
Pet H&P	0.31	12	15	10¼	10⅛	10⅛	
Phil LD	0.17	8	120	21⅛	20¾	20¾	-¼
Pitway A x	1.10	10	111	23½	23⅜	23½	
Ply Gem	0.12	157	2100	7⅞	7⅞	7⅞	

NASDAQ NATIONAL MARKET

3:00 pm prices October 7

AMERICA

Westinghouse interim results take toll on Dow

Wall Street

A BIG third-quarter loss and billion-dollar charge at Westinghouse took its toll on share prices yesterday, *writes Patrick Harverson in New York.*

By 1.30 pm the Dow Jones Industrial Average was down 10.28 at 2,951.49. The more broadly based Standard & Poor's 500 was also weaker at midsession, falling 1.00 to 380.24 by 1 pm, while the Nasdaq composite of over-the-counter stocks dropped 3.26 to 517.14. Volume on the NYSE was 90m shares by 1 pm.

After Friday's 23-point fall on the Dow, the market opened in a nervous mood. Although hopes of an interest rate cut has provided some support for share prices (and Friday's key September retail sales and producer prices data could give the Federal Reserve an excuse to ease policy) fears about what the third-quarter reporting season will reveal about corporate earnings have dominated.

Those fears were realised yesterday when Westinghouse Electric released its July to September numbers and announced plans to raise $900m in new equity. The loss of $4.86 a share compared with a modest gain of 87 cents a share at the same stage a year ago, included a $1.86bn charge to cover losses at its financial subsidiary, Westinghouse Credit, which lost $1.12bn in the quarter.

After a delayed opening owing to an order imbalance on the sell side, Westinghouse fell $2¼, or more than 10 per cent, to $19¼, on turnover of more than 2m shares.

The fact that Westinghouse's troubles stemmed primarily from bad real estate loans and investments at its financial services unit hurt other companies in related businesses. American Express, already unsettled by high default rates on one of its credit cards, fell another $¾ to $20⅞, while General Electric, which has a large financial services subsidiary, lost $¾ at $67⅝.

McDonnell Douglas bucked the trend, rising $2⅛ to $61⅝ on the news that the company has signed a $400m credit agreement, an indication that its lender banks have confidence in the aircraft and defence group.

IBM firmed $⅜ to $99 in active trading, buoyed up by forecasts from analysts of a strong fourth quarter and 1992 fiscal year. Mr Daniel Mandresh, analyst with Merrill Lynch, upgraded his intermediate term rating on IBM stock from "neutral" to "above average" and lifted his 1992 forecast from $8-$9 a share to between $9 and $10 a share. IBM is due to release its third quarter results a week today, and the market is expecting profits to be between 25 cents and 30 cents a share.

National Medical Enterprises slumped $3¼ to $17 on reports that federal and state investigators were looking into allegations of fraud at health insurance companies.

On the over-the-counter market, Amgen jumped $1⅞ to $54¼ in volume of 1.8m shares, after the US Supreme Court denied a request from Genetics Institute to overturn decisions taken by lower courts that validated Amgen's patent on the anti-anaemia drug, Epo. The news sent Genetics Institute shares tumbling $1¼ to $38¾.

Canada

TORONTO stocks drifted lower in slow midday trade, as nervousness over third-quarter earnings and the strength of the recovery in the US economy continued to dominate. The composite index lost 14.6 to 3,364.3. Declining issues led advances by 240 to 158 on volume of 12.6m shares valued at C$128.5m.

Central Guaranty Trustco dropped C$1⅛ to C$6 in volume of 61,000 shares. Montreal Trustco said it has ended negotiations for a possible purchase of a subsidiary of Central Guaranty Trustco.

Among active stocks, CAE Industries was steady at C$7¼, TransCanada Pipe fell C$¼ to C$16¼ and Nova Corp fell C$⅜ to C$7.

EUROPE

Continent starts the week lower but in thin volume

MOST BOURSES fell yesterday, but the losses came in thin volume. Worries about Wall Street, which opened lower after Friday's decline, weighed on several markets, *writes Our Markets Staff.*

FRANKFURT drifted below the psychologically important barrier of 1,600 on the DAX index for the first time since August. But dealers said they were not unduly concerned by the drop, which was the result of traders marking down prices and not of selling pressure from institutions.

The real-time DAX index ended 13.07 down at 1,588.66, just above the day's low of 1,588.64, while the FAZ index, calculated at midsession, fell 3.01 to 661.15. Volume was estimated at no more than Friday's DM3.03bn.

There was little corporate news to give the market fresh direction. Dealers said that trading could remain in a narrow range until the government's decision on whether to impose a withholding tax on fixed-interest income, due around November 8.

Engineering and car shares were weak, as Linde fell DM9 to DM793 while MAN dropped DM2.50 to DM368.50. Volkswagen dropped DM5.50 to DM346 and BMW lost DM6 to DM476.

MILAN continued to slip, as investors were unwilling to commit themselves ahead of the close of the October trading month on October 16. The Comit index fell 3.85 to 535.18 in volume estimated at less than Friday's L91bn.

Olivetti provided the exception as it rose 3.3 per cent or L105 to L3,250. There were few reasons for the rise, apart from reports that the company was supporting its own stock.

Cir, the De Benedetti holding company, eased L30 to L2,410, but rose to L2,450 after hours. Elsewhere, Fiat fell L21 to L5,169.

The insurance sector continued to be weak, with Generali falling L390 to L24,560 and Ras down L150 at L17,350.

PARIS fell in thin trading but ended above its lows, as the spotlight was turned on Eurotunnel. The CAC 40 index closed 8.33 down at 1,843.58, after falling to 1,836.17 earlier in the session. Turnover was less than Friday's FFr2.1bn.

Eurotunnel dropped FFr2.10 or 4 per cent to FFr49.90, after reaching a day's low of FFr48.80, in volume of 1.55m shares. The market was worried that the opening of the Channel tunnel could be delayed. The company also postponed the payment of its first dividend until 2000.

Club Mediterranée, the leisure group, bucked the trend, rising FFr4.80 to FFr458.80. The company said that the future of its airline businesses was under consideration but a decision had not yet been reached.

Peugeot shed FFr6 to FFr600 before announcing a fall in first-half net profits of 54 per cent, slightly better than expectations.

Générale des Eaux dropped FFr42 to FFr2,385 in 32,360 shares, on fears that a 3 per cent stake placed privately last week would find its way on to the market.

MADRID's general index rose 1.65 to 266.96 in turnover of Pta12bn after Pta15bn.

Activity centred on utilities. Fecsa fell Pta29 or 3.8 per cent to Pta732 in heavy volume of 1.16m shares. The stock was requoted after its suspension on September 27, when Endesa, the state-controlled utility, announced the terms of its offer for a further 25 per cent of Fecsa – a move opposed by Iberdrola, the leading private sector utility.

Unión Fenosa gained Pta9 to Pta575 in 1.08m shares and Telefónica, the telecommunications group, rose Pta25 to Pta1,195 in 2.57m shares.

STOCKHOLM closed lower in thin trading as the market waited for more details from the government on its intention to abolish turnover tax on stock transactions. The Affärsvärlden General index declined 11.3 to 1,018.0 in turnover of just SKr195m after SKr261m.

Electrolux free B shares closed SKr8 lower at SKr252 after news on Friday that its US subsidiary, White Consolidated, would be sued to acknowledge responsibility for $100m in unfunded benefit liabilities.

LISBON responded to the weekend's election results with another rise. The market had expected the ruling Social Democrats to win, but not by such a large margin, according to Mr John Ferreira of Carnegie International. The BTA index, which gained 34.4 on Friday, added another 13.7 to 2,247.0 by 2 pm yesterday.

Falling inflation and good earnings growth by leading companies could attract further foreign buying, and keep the current momentum going, said Mr Ferreira. The market has risen only 5 per cent so far this year, compared with a gain of 18 per cent for Europe as a whole.

BRUSSELS closed mixed in moderate trading. The Bel20 index eased 1.42 to 1,101.01 in turnover of BFr570m.

Société Générale de Belgique closed up BFr45 at BFr2,100 with 18,400 shares traded on the eve of its first-half results, expected to be better than forecast.

AMSTERDAM failed to hold on to early gains. The CBS Tendency index was off 0.7 at 88.7. Among blue chips, Unilever fell Fl 1.50 to Fl 161.60 while Hoogovens shed Fl 1.60 to Fl 52.50.

ZURICH fell in uncertain trading, following news that the stamp tax on securities transactions could be reformed. The Crédit Suisse index fell 4.10 to 514.3.

News that Swiss inflation had risen 0.2 per cent in September from August and 5.7 per cent year on year was within expectations and had little impact.

OSLO fell further in lethargic trading. The all-share index lost 7.58 or 1.6 per cent to 476.22 in turnover of NKr115m.

FT-SE Eurotrack 100 - Oct 7

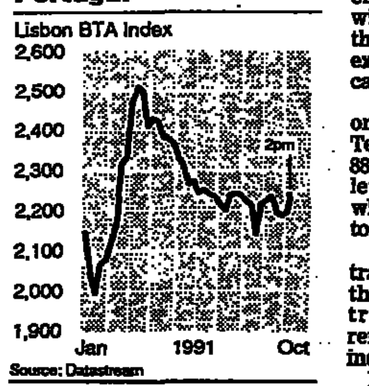
Hourly changes							
Open	11 am	Noon	1 pm	2 pm	3 pm	4 pm	Close
1093.65	1094.17	1093.96	1093.26	1092.50	1091.65	1091.98	1092.53

Day's High 1094.62 — Day's Low 1091.65

Oct 4	Oct 3	Oct 2	Oct 1	Sep 30
1098.21	1102.18	1104.34	1105.95	1100.47

Base value 1000 (26/10/90)

Portugal



Source: Datastream

SOUTH AFRICA

JOHANNESBURG was boosted by further gains in gold shares as bullion held firm at $360. The all-gold index ended 28 higher at 1,196 while the industrial index firmed 17 to 4,078. The all-share index added 21 to 3,410.

ASIA PACIFIC

Nikkei falls as nervous investors stay on sidelines

Tokyo

SHARE PRICES fell in thin trading yesterday in spite of the yen's continued strength against the dollar. Investors grew wary of the Nikkei average's recent surge and stayed on the sidelines, *writes Emiko Terazono in Tokyo.*

The Nikkei finished down 266.07 at 24,330.83 after opening at the day's high of 24,559.52 and reaching the session's low of 24,311.74 in the afternoon. Volume fell to 300m shares from 450m.

Declines led advances by 654 to 332, with 156 issues unchanged. The Topix index of all first section stocks shed 10.94 to 1,872.38 and, in London, the ISE/Nikkei 50 index eased 2.27 to 1,410.67.

A rumour that the Finance Ministry may order the Big Four securities houses – Nomura, Daiwa, Nikko and Yamaichi – to suspend business caused some nervousness. Investment trusts and foreigners were seen selling, and individuals who had been looking for short-term gains also took to profit-taking.

Export-oriented high-technology issues lost ground on the higher yen, which gained Y0.67 to Y129.53 against the dollar on speculation that the authorities will allow it to appreciate. TDK fell Y190 to Y5,130 and NEC Y50 to Y1,290.

On the other hand, oil-related issues rose on expectations that the higher yen would reduce oil import costs. Showa Shell Sekiyu, the oil refiner, put on Y30 to Y1,980. All Nippon Airways, the leading airline, gained Y10 to Y1,480 on hopes that lower oil prices would improve profits.

Sectors that are not affected by currency movements, such as constructions and road builders, advanced. Roadbuilders are expected to be beneficiaries of the government's public works investment. Maeda Road Construction added Y60 at Y3,040 and Nippon Hodo Y20 at Y3,020.

Kyowa Hakko Kogyo, the chemical company, appreciated Y10 to Y1,420 in active trading, as reports that the company had succeeded in extracting an anti-cancer agent from a beehive compound encouraged investors.

In Osaka, the OSE average receded 149.94 to 26,859.48 in volume of 19.5m shares. Nintendo, the game maker, shed Y600 to Y13,700 on the stronger yen, while Mori Seiki, the machinery tool maker, lost Y100 to Y2,300 on reports of a 30 per cent fall in pre-tax profits for the current fiscal year.

Roundup

THE FALL in Japan depressed most Pacific Rim markets yesterday.

BANGKOK fell sharply on profit-taking. The SET index dropped 18.91 or 2.8 per cent to 645.56 in turnover of Bt2.42bn. Among the day's losers, Siam Cement lost Bt14 to Bt556, Siam City Cement Bt5 to Bt119 and Jalaprathan Cement Bt18 to Bt534.

MANILA built on Friday's 2.9 per cent gain, although profit-taking set in as the composite index neared the 1,000 resistance level.

The index closed 10.72 higher at 998.99 in turnover of 122m pesos, down from 137m pesos.

First Philippine Holdings, an affiliate of Meralco, the power company, rose 0.50 to 22.75 pesos on news that a court had freed a portion of its sequestered state-held shares.

AUSTRALIA slipped in quiet trading. The All Ordinaries index relinquished 7.8 to 1,579.2 as turnover eased to A$177m from A$188m, partly because of a public holiday in New South Wales and the Australian Capital Territory.

News Corp declined 30 cents to A$11.20 after the recent weakness of the New York market, where the stock is also listed.

NEW ZEALAND was also affected by the Australian holiday, as the NZSE-40 index fell 15.95 or 1.1 per cent to 1,440.89 in much reduced turnover of NZ$6.5m, against NZ$14m.

HONG KONG continued to consolidate after last week's record highs. The Hang Seng index eased 7.32 to 4,060.37 in modest turnover of HK$1.06bn, down from HK$1.63bn.

SINGAPORE slipped in thin trading. The Straits Times Industrial index edged 7.94 lower to 1,345.26 as volume declined to 30m shares from 34.5m. **KUALA LUMPUR** also eased further, the composite index losing 4.86 to 508.25 in volume of 25m shares (22.6m).

TAIWAN moved higher in quiet trading. The weighted index, which gained 53.95 on Saturday, added 20.99 at 4,817.65 in turnover of T$13bn, up from T$9.5bn. **SEOUL** inched upwards, with the composite index improving 1.36 to 713.88 in turnover of Won424bn, up from Saturday's half-day total of Won342bn.

Japan continues to support rest of world

By Antonia Sharpe

JAPAN consolidated its newly found position as the locomotive for world stock markets last week, as the US and Europe faltered. According to the FT-Actuaries World Indices, the world index rose 0.6 per cent on the week in local currency terms, but excluding Japan it would have declined by 0.6 per cent.

Tokyo's 3.1 per cent rise, the best of the week, was triggered by the Bank of Japan's decision to lower reserve requirements for commercial banks, thus indirectly easing credit. The increase in daily volume to about 600m shares, from about 450m the previous week, and strength in the bond market and the yen raised hopes that the rally would continue.

In its weekly review, Nomura International says the yen's climb against the dollar could lead to some weakness in export-related shares. "This could be the ideal time to purchase these stocks, particularly if you favour the scenario that the US economy will show signs of improvement in the new year," the broker says.

Nomura, however, maintains a cautious approach to the stock market in general, because of possible earnings disappointments.

The Pacific Rim provided the week's second-best performer, Hong Kong, and the worst, Malaysia. Hong Kong reached a record high and gained 2.9 per cent on the week, propelled by heavy overseas buying. Poor economic prospects pushed Malaysia down by 3.6 per cent, bringing its loss so far this year to 7.5 per cent – the worst showing in the FT-A indices.

In Europe, Spain stood out with a 2.9 per cent drop, dragged down by a weak construction sector following news of a cutback in infrastructure spending.

In its October review, Hoare Govett stays with its underweight position on the Spanish market. "Aside from the prospect of marginally lower interest rates as inflation subsides, there is little in the pipeline that could conceivably alter sentiment for the Spanish market this year," the broker says.

MARKETS IN PERSPECTIVE

	% change in local currency †				% change sterling †	% change in US $ †
	1 Week	4 Weeks	1 Year	Start of 1991	Start of 1991	Start of 1991
Austria	−1.06	−5.19	+2.75	+2.22	+1.43	−8.80
Belgium	+1.58	−3.19	+6.23	+9.32	+8.69	−2.06
Denmark	−0.33	−2.75	+13.79	+22.06	+21.06	+9.08
Finland	+0.68	−13.11	−7.33	−6.02	−7.38	−16.55
France	−1.34	−0.30	+18.56	+20.81	+19.41	+7.59
Germany	−0.57	−3.46	+8.15	+9.12	+7.93	−2.74
Ireland	−1.33	−2.02	+13.32	+19.16	+18.78	+7.03
Italy	−0.31	−3.27	−9.63	+2.24	+2.14	−7.96
Netherlands	−0.48	−3.43	+14.86	+16.48	+15.44	+4.02
Norway	−2.17	−4.93	−12.42	+6.84	+6.40	−4.13
Spain	−2.90	−1.73	+21.61	+20.16	+20.04	+8.16
Sweden	−0.85	−3.69	+11.25	+27.18	+29.99	+17.13
Switzerland	+1.21	−1.86	+19.59	+21.85	+17.54	+6.91
UK	+0.70	−1.73	+27.61	+22.50	+22.50	+10.38
EUROPE	−0.05	−2.13	+17.72	+17.81	+17.08	+5.49
Australia	+2.04	+1.07	+19.62	+25.82	+43.73	+29.52
Hong Kong	+2.98	+1.78	+43.64	+37.31	+53.54	+38.35
Japan	+3.13	+6.96	+17.47	+9.89	+27.32	+14.71
Malaysia	−3.61	−7.96	+6.20	−7.50	+1.37	−8.66
New Zealand	−0.53	+1.12	−10.40	+10.97	+18.63	+6.86
Singapore	−0.24	−5.52	+21.25	+15.74	+32.25	+19.16
Canada	−0.35	−3.48	+3.48	+1.23	+15.18	+3.78
USA	−1.22	−1.89	+22.97	+16.23	+26.99	+16.23
Mexico	+0.04	−1.02	+157.66	+111.71	+126.82	+104.37
South Africa	+2.88	−0.88	+22.62	+24.69	+52.06	+37.01
WORLD INDEX	+0.63	+0.84	+19.69	+14.76	+25.69	+13.25

† Based on October 4th 1991. Copyright, The Financial Times Limited, Goldman, Sachs & Co.,and County NatWest Securities

FT-ACTUARIES WORLD INDICES

Jointly compiled by The Financial Times Limited, Goldman, Sachs & Co., and County NatWest/Wood Mackenzie in conjunction with the Institute of Actuaries and the Faculty of Actuaries

NATIONAL AND REGIONAL MARKETS	FRIDAY OCTOBER 4 1991								THURSDAY OCTOBER 3 1991					DOLLAR INDEX		
Figures in parentheses show number of lines of stock	US Dollar Index	Day's Change %	Pound Sterling Index	Yen Index	DM Index	Local Currency Index	Local % chg on day	Gross Div. Yield	US Dollar Index	Pound Sterling Index	Yen Index	DM Index	Local Currency Index	1991 High	1991 Low	Year ago (approx)
Australia (69)	152.90	+0.2	130.35	125.59	133.35	128.08	+0.2	4.74	152.62	129.26	126.14	132.11	127.80	153.54	112.74	133.36
Austria (20)	179.72	−1.7	153.22	147.63	156.74	156.36	−1.1	1.81	182.76	154.79	151.06	158.21	158.03	222.37	154.82	187.65
Belgium (47)	129.50	+0.0	110.40	106.36	112.93	110.33	+0.6	5.37	129.50	109.68	107.02	112.10	109.70	151.20	118.04	132.26
Canada (114)	134.95	−0.5	115.05	110.84	117.68	110.61	−0.5	3.43	135.62	114.87	112.09	117.39	111.12	142.27	126.49	127.27
Denmark (37)	253.76	−1.3	216.34	208.45	221.31	223.12	−0.7	1.58	257.07	217.73	212.47	222.53	224.73	270.56	217.74	245.08
Finland (15)	86.07	−0.3	73.38	70.70	75.06	73.74	+0.6	3.30	86.31	73.10	71.33	74.71	73.33	125.15	84.92	102.75
France (109)	141.75	−1.4	120.85	116.43	123.61	127.02	−0.7	3.49	143.75	121.75	118.80	124.43	127.91	152.26	119.11	131.72
Germany (65)	108.83	−1.0	92.78	89.40	94.91	94.91	−0.3	2.37	109.96	93.13	90.89	95.18	95.18	125.35	94.15	108.14
Hong Kong (55)	168.52	−0.4	143.67	138.43	146.96	167.48	−0.5	4.26	169.24	143.34	139.87	146.50	168.24	169.98	119.62	116.46
Ireland (18)	158.90	−0.8	135.47	130.53	138.58	140.24	−0.2	3.57	160.19	135.67	132.39	138.66	140.45	182.46	132.88	151.03
Italy (77)	72.08	−1.8	61.45	59.20	62.86	67.45	−1.2	3.44	73.40	62.16	60.66	63.53	68.27	88.23	64.76	85.37
Japan (474)	143.12	+0.7	122.02	117.56	124.84	117.56	+0.1	0.72	142.07	120.33	117.42	123.00	117.42	146.97	118.23	121.87
Malaysia (68)	193.76	−1.4	165.19	159.15	168.98	204.13	−1.5	2.95	196.59	166.50	162.47	170.17	207.15	247.78	189.18	186.23
Mexico (16)	1194.46	+0.6	1018.34	981.17	1041.72	3994.92	+0.6	1.32	1187.18	1005.48	981.19	1027.66	3970.58	1226.36	534.45	482.93
Netherland (31)	139.35	−0.6	118.81	114.47	121.54	120.11	+0.0	4.49	140.26	118.80	115.93	121.42	120.13	145.73	125.70	129.01
New Zealand (14)	46.39	−2.1	39.55	38.11	40.46	43.51	−1.8	6.69	47.41	40.15	39.18	41.04	44.32	54.64	41.18	56.06
Norway (31)	195.84	−1.0	166.96	160.87	170.80	174.18	−0.5	1.62	197.85	167.57	163.52	171.27	175.02	223.24	178.58	239.27
Singapore (38)	189.79	−0.3	161.81	155.90	165.52	147.68	−0.2	2.41	190.40	161.26	157.36	164.81	147.93	208.25	151.63	150.69
South Africa (61)	250.58	+0.4	213.63	205.83	218.53	169.84	+0.7	3.21	249.55	211.35	206.24	216.01	168.62	258.85	173.00	151.50
Spain (53)	151.77	−1.3	129.39	124.67	132.36	122.05	−0.7	4.44	153.74	130.21	127.07	133.08	122.93	171.12	131.51	136.74
Sweden (25)	186.77	−1.7	159.23	153.42	162.89	168.86	−1.0	2.64	189.91	160.85	156.96	164.40	170.58	204.12	146.60	176.91
Switzerland (59)	94.19	−0.5	80.30	77.37	82.15	85.86	+0.2	2.25	94.69	80.20	78.27	81.98	85.51	100.67	82.17	89.74
United Kingdom (240)	182.86	−0.7	155.90	150.19	159.46	155.90	−0.1	4.75	184.22	156.03	152.24	159.45	156.03	187.44	156.27	165.76
USA (526)	154.94	−0.8	132.10	127.28	135.14	154.94	−0.8	3.14	156.17	132.26	129.07	135.19	156.17	161.02	125.95	125.52
Europe (827)	141.92	−0.9	120.99	116.58	123.78	122.96	−0.3	3.90	143.27	121.34	118.41	124.02	123.30	151.52	125.50	134.56
Nordic (108)	184.11	−1.4	156.96	151.24	160.57	157.83	−0.8	2.06	186.68	158.11	154.29	161.60	159.05	200.81	155.55	182.81
Pacific Basin (718)	143.31	+0.6	122.18	117.72	124.99	118.71	+0.1	1.05	142.40	120.61	117.69	123.27	118.62	145.92	117.86	121.91
Euro – Pacific (1545)	143.10	+0.0	122.00	117.54	124.80	121.23	−0.1	2.17	143.09	121.19	118.26	123.86	121.30	147.66	121.29	127.40
North America (640)	153.64	−0.8	130.98	126.22	134.01	151.94	−0.8	3.16	154.82	131.13	127.98	134.04	153.11	159.66	125.91	125.64
Europe Ex. UK (587)	117.85	−1.1	100.47	96.82	102.80	104.15	−0.4	3.23	119.16	100.92	98.50	103.17	104.60	129.80	103.58	115.49
Pacific Ex. Japan (244)	145.03	−0.3	123.65	119.15	126.50	127.80	−0.3	4.29	145.53	123.26	120.30	125.99	128.20	147.60	111.40	121.67
World Ex. US (1736)	144.59	+0.0	123.27	118.78	126.10	122.30	−0.1	2.23	144.58	122.45	119.50	125.16	122.37	148.16	122.32	127.84
World Ex. UK (2022)	143.59	−0.2	122.42	117.95	125.24	130.23	−0.3	2.29	143.90	121.88	118.94	124.58	130.68	145.77	120.06	122.15
World Ex. So. Af. (2201)	146.32	−0.3	124.75	120.21	127.62	132.33	−0.3	2.54	146.74	124.28	121.29	127.03	132.77	148.66	122.92	125.88
World Ex. Japan (1788)	150.47	−0.8	128.29	123.62	131.25	140.73	−0.5	3.47	151.65	128.44	125.35	131.29	141.47	152.85	126.69	129.44
The World Index (2262)	147.00	−0.3	125.33	120.76	128.21	132.65	−0.3	2.55	147.41	124.85	121.84	127.61	133.07	149.01	123.28	126.03

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Latest prices were unavailable for this edition.

DIESEL TECHNOLOGY

The big challenge for the industry is now technological. It must meet ever-tightening standards of exhaust emission while still continuing to manufacture engines that meet the consumers' needs on performance, endurance, fuel economy and cost. Andrew Baxter investigates

Balancing act for producers

THE diesel engine celebrates its centenary next year with a solid record of achievements behind it, but a formidable list of challenges ahead in the remainder of the 1990s.

After the industry restructuring of the 1980s – among independent engine customers and engine-producing vehicle manufacturers – overcapacity remains a pressing concern. But the supreme challenge for the industry is now technological – meeting ever-tightening exhaust emission standards while continuing to produce engines that are attractive to users on performance, endurance, fuel economy and cost.

"That is what is driving the industry," says Mr Henry Schacht, chairman and chief executive of Cummins Engine, the world's largest independent producer. It is a tough balancing act even for the largest of the 40 or so big worldwide engine manufacturers.

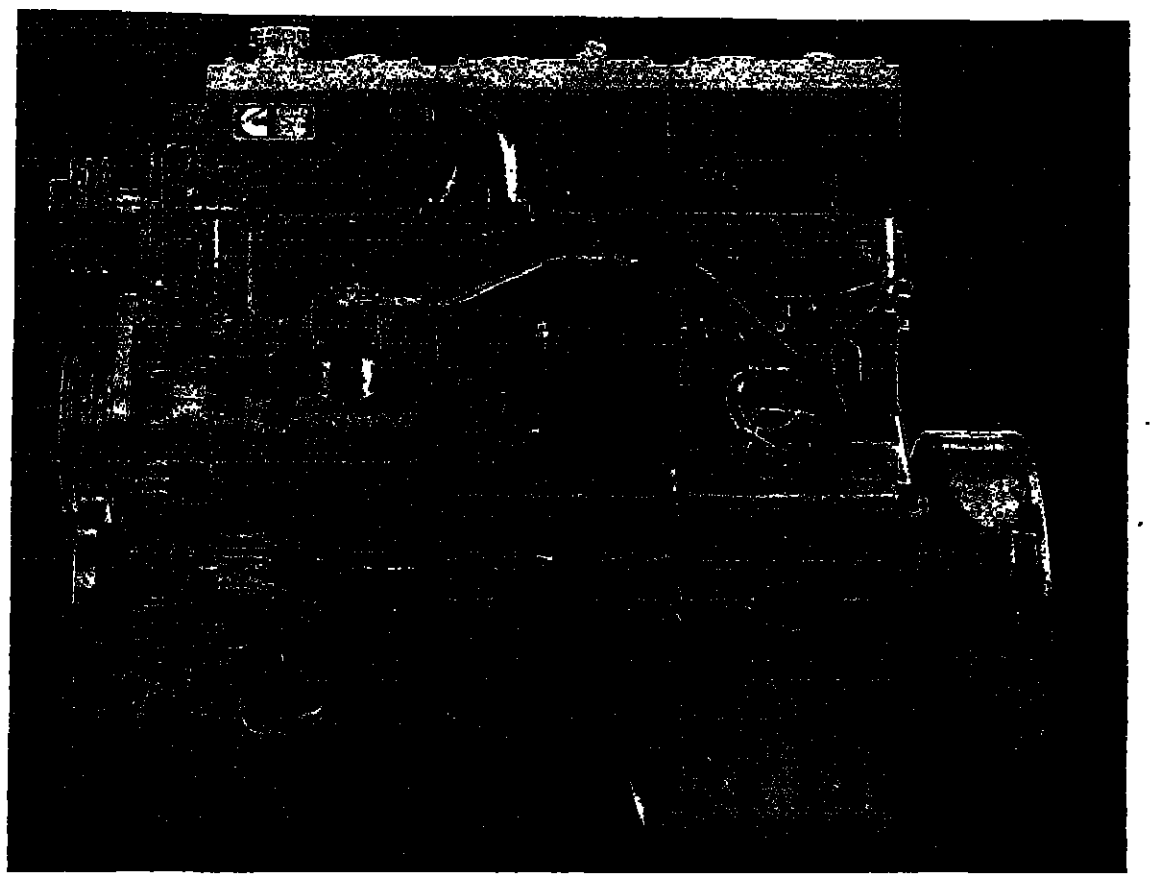
The task is exacerbated by the current recession – virtually worldwide and across all sectors from automotive and construction equipment to marine and industrial uses – and by an image problem which the industry has yet to resolve. Despite a modern diesel's inherent cleanness, there are still too many older, poorly-maintained engines chugging along belching black smoke and perpetuating the perception in the public mind that diesels are noisy and dirty. "They give all of us a bloody nose," says Mr Schacht.

These perceptions are important. It is difficult enough for producers to negotiate the ever-changing shoals of emission regulations without being handicapped by an image that ignores some of the real advances made over the past 15 years in producing cleaner diesel engines. Most engine producers accept they have to put the "green" message over more effectively.

The "total sales pitch" for diesel – combining environmental arguments with the fuel economy case – is particularly important in the sectors where alternative fuels are more commonly used. The passenger car market is the most obvious example and contrasts with sectors such as construction equipment where diesel rules the roost.

Perkins, the UK-based engine producer owned by Varity, puts the case simply: "The advantages over petrol – that is, no lead, low carbon monoxide, hydrocarbons and NOx (nitrous oxides) and, most of all, better economy with resultant reductions in carbon dioxide – are making the diesel increasingly more attractive."

Depending on the type of fuel injection system, and the type of journey, diesel engines can be 30 per cent more fuel efficient than petrol engines, although Perkins' Prima car engine claims a 40 per cent advantage. But extra fuel efficiency, stemming partly from a direct fuel injection system, means more noise, and there are other trade-offs which producers have to tackle. Reducing NOx levels can increase the output of particulates, or soot, which not only block filters and reduce performance but have also raised worries in the industry about a possible carcinogenic link.



A Cummins 14-litre diesel engine with the latest Celect electronic fuel system

Emissions regulations may be driving the industry's technological efforts, but there is no single destination or timetable. The US has tended to set the pace on legislation which hitherto has focused on the on-highway uses of diesel, and since 1988 Europe has followed with a series of initiatives enacted or planned.

From July 1 1992 and October 1 1993 respectively, new and established truck models in production will come within tougher limits amending the EC's 1988 directive. That had focused on carbon monoxide, hydrocarbons and NOx, but the next stage will include particulates for the first time. Another, even tighter round, will follow in 1995/96.

Now the battle ground is moving off the highway and applications such as construction equipment look set to be brought within the emissions net by the mid-1990s, probably in both the US and Europe. The construction equipment market has hitherto restricted its environmental concerns to noise problems and engine producers such as Deutz of Germany are responding by moving away from air-cooled to liquid-cooled diesels. This, neatly, cuts noise and also anticipates future exhaust emission legislation.

There is also a feeling, expressed without too much confidence because of traditionally incompatible testing procedures, that EC and US regulations are converging. That, at least, might simplify matters for global producers, although the significance is unlikely to be felt until the late 1990s.

For the big producers, the preferred technological approach in the battle for ever cleaner engines is, as Perkins says, "to deal with emissions at source – at the point of combustion and controlling what goes on inside the cylinder." Add-ons after combustion, notably "particulate traps" to catch the emitted soot, have yet to become commercial reality. Inevitably, therefore, the introduction of electronic fuel injection, allowing much more precise control of the sequence – and consequence – of events at combustion, is an enormously important development for the diesel industry.

Bosch, a pioneer in the older mechanical injection system, claims a further first with the introduction in 1987 of an electronically-controlled diesel injection system for cars and commercial systems.

But there are other big players in a promising but very competitive market, including Lucas of the UK and Diesel Kiki of Japan.

One of the attractions is that use of electronic fuel injection is likely to spread steadily from automotive into other applications – such as construction equipment and marine – through the 1990s as emissions regulations increase its relevance.

In the marine market, the possibility to advance to electronic fuel injection on large engines is now a reality, says Dr Harvey Perkins, managing director of GEC Alsthom Diesels. A second technological thrust involves developing, and finding new applications for, more established engine features. Turbocharging was originally introduced to obtain increased power for weight but because it feeds off exhaust gases it can also be used to reduce NOx and particulate levels compared with naturally-aspirated (i.e. non-turbocharged) diesels.

According to PRS Consulting International, the London research group, one response to the EC 1992 regulations could be more powerful turbos, while the tougher regulations being introduced in the mid-1990s in the US and EC could provide a role for variable geometry turbos, where the blades are adjustable.

If the industry continues to spend heavily on research and development, it can gradually solve the technical problems raised by emissions legislation, but the effort so far has already required heavy spending. Cummins, for example, spends \$180m-\$200m a year on R&D, and has had to restructure financially and broaden its product line to maintain this level.

It is when surveying the future of the diesel engine industry that the technological, industrial and financial trends have to be viewed together. Strong markets are necessary to finance technology spending, which in turn is vital if diesels are to find acceptance in markets that have hitherto spurned them.

According to Perkins, there are signs that the US market is now picking up, while continental Europe has provided the bright spots. But Mr Schacht at Cummins sees no sign yet of an end to the recession, with a few minor exceptions.

For long-term growth, the broad-based diesel engine makers have to pin their hopes on markets where they have yet to penetrate fully, and that means, primarily, the passenger car market – "last bastion of the petrol engine" according to Perkins.

US emission testing methods have all but closed the domestic market for diesel cars, but the picture in continental Europe is brighter, with diesel engine penetration of car registrations approaching 35 per cent in Belgium and France.

Worldwide, diesel accounted for just 13.4 per cent of the 92.7m engines produced in 1989, according to PRS.

Even with some markets such as construction equipment locked up already, that should give something for the diesel industry to aim at, if it can keep on top of the technology challenge and win the battle for hearts and minds.

IN THIS SURVEY

■ ***Editorial production: Phil Sanders***

Britain's 700,000 diesel trucks, buses, and taxis were blamed for polluting the skies

John Dunn looks at environmental aspects

Is this the 'green' engine of the future?

THOMAS the Tank Engine doesn't like diesels. "Nasty, smelly things," he complains loudly. Today, 45 years after the Rev W. Awdry published his first tale about a tribe of rather spoilt and spiteful steam engines presided over by The Fat Controller, the diesel is still despised.

Last month, a 120-page report from the Royal Commission on Environmental Pollution heaped on the opprobium when it blamed the 700,000 diesel trucks, buses, and taxis on Britain's roads for seriously polluting the skies. The diesel was responsible for a fifth of all acid-rain gases emitted in the UK in the form of nitrous oxides (NOx), and for a third of all the black smoke in the air, it said.

The report added that diesel exhaust fumes were being linked with cancer. The tiny, sooty particles could carry potential carcinogens into the lungs, it said.

So, as the hundredth anniversary of Rudolf Diesel's invention approaches next year, are Thomas the Tank Engine and his chums right, to nickname it the "diseasel"?

Europe's car and truck makers definitely say no. And they are going to great lengths to persuade us that despite the current fug and fume of the estimated 100m diesel engines in use around the world, the diesel really is the "green" engine of the future. It is better for us and for our environment than its petrol driven cousin, they say.

PSA – which takes in Citroen and Peugot to make it the biggest diesel engine maker in the world – claims, for example, that a modern diesel engine produces a third less carbon dioxide, 90 per cent less carbon monoxide, 90 per cent less unburned hydrocarbons and 60 per cent less NOx than an unleaded petrol engine fitted with a catalyst.

In the UK, Lucas, which makes diesel fuel injection equipment, says diesels have a better emission performance overall than petrol engines. Continuing improvements in performance have now put diesels on a par with petrol engines, Lucas claims. This performance increase, coupled with their greater fuel economy – and much reduced emissions of carbon dioxide, the "Greenhouse" gas, makes diesels the best option for the 1990s, Lucas says.

Yet serious doubts remain about the supposed "greenness" of the diesel. "The diesel is not the panacea for reducing vehicle emissions," warns Prof Garel Rhys, director of the centre for motor industry research at Cardiff University. "With the advent of unleaded petrol and the catalytic converter for petrol engines, there is now a very fine calculation to be made between the environmental benefits of diesel and petrol."

The diesel engine has two big environmental advantages over the petrol engine. It is up to 30 per cent more fuel efficient on stop-start journeys around cities, enabling it to produce 30 per cent less carbon dioxide. Diesel fuel is also cheaper to make and requires less sophisticated refining technology, so making it universally available.

For heavy trucks, vans, marine engines, construction machinery, generators and all sorts of off-road applications, there is no alternative to the diesel, says Prof Rhys. "Urban buses would simply cease to exist without the diesel."

To get rid of nitrous oxides, an engine – petrol or diesel – has to run slightly rich, leaving a little fuel unburned, otherwise the catalytic converter won't work

But the diesel also faces two big environmental hurdles: how to get rid of the soot (particulates) and the NOx.

On a petrol engine, the latest three-way catalytic converters remove virtually all the pollutants in the exhaust, except carbon dioxide. No such panacea exists for the diesel.

The reason is that to get rid of NOx an engine – petrol or diesel – has to run slightly rich, leaving a little fuel unburned, otherwise the catalytic converter won't work. "If you tried to run diesels with a rich mixture, the soot levels would turn the streets into the oilfields of Kuwait," says Prof Douglas Greenhalgh at the Cranfield Institute of Technology.

Catalytic converters also do not eradicate as many of the hydrocarbons in diesel exhaust as they do in a petrol engine. Indeed, there's evidence that they may even turn some of them into even more toxic compounds.

Nevertheless, systems for removing diesel engine NOx are being developed. But, according to automotive engineering consultancy Ricardo, in an appendix to the Royal Commission report, the health implications of these systems are not known.

The other problem is the soot. It blocks catalysts and filters, leading to poor performance. It can be reduced by raising the operating temperature of the engine so that the soot is burned off. Unfortunately, there is a trade-off.

The higher the engine temperature, the more NOx is produced.

One answer is to fit a particulate trap, a device designed physically to capture the soot. But traps need regular cleaning. Currently, this means they must be heated periodically, usually while the vehicle is moving, to burn off the soot.

So far, says Prof Rhys, there is not a working particle trap in production. "One wonders if, when they are in production, whether the safety directorate will actually allow them on a vehicle anywhere near the fuel lines."

An EC directive introduced last October will tighten up diesel soot and NOx emissions in two stages by 1996.

Prof Rhys says: "Diesel makers are now facing the same sort of environmental controls that the petrol engine makers faced 10 years ago. And they are in trouble until they can solve the particulate problem."

According to Ricardo, there are several relatively simple modifications that could be made to existing designs that would enable the diesel to meet interim pollution limits. These include fitting electronic injection systems and improving combustion within the engine.

But, warns Prof Rhys, in the long-term, the future of the diesel industry, depends on the scientists finding a solution.

Prof Rhys believes that the enormous cost of the research and development needed will inevitably force many smaller diesel engine makers, companies such as Mann, Leyland Daf and Scania, for example, to pull out altogether or to form joint ventures to pool their resources.

The same fate may ultimately await the big car makers. Unless the differential between diesel fuel and petrol prices is increased dramatically, who needs a a diesel? There is a strong feeling within the industry that the unleaded petrol engine with its environmentally friendly catalytic converter will become perfectly acceptable.

There will be a lot of work to be done to persuade the motoring public to disagree with Thomas the Tank Engine's verdict on the diesel.

The author is the Deputy Editor of The Engineer

Dr Cecil French examines the latest trends in technical development

Growing emphasis on emissions

THE very wide use of diesel engines for transport, industrial and generating applications has resulted from their ability to deliver very good fuel economy coupled with excellent reliability, low maintenance costs and long life.

Ever since the first diesel engine was produced in 1892, and in particular over the past 40 years, very large increases in engine output in terms of power per unit weight and power per unit volume have been obtained while at the same time further improvements in fuel economy and the other operating advantages have been achieved.

With growing emphasis on carbon dioxide emissions and on the "Greenhouse" effect and with likely increases in the cost of petroleum fuels, the importance of fuel economy is likely to be emphasised in the future. At the same time, engine designers must cope with the growth of other environmental legislation, leading to a need to reduce engine noise and to achieve very low levels of other exhaust gas pollutants. As far as the diesel engine is concerned, this means very low levels of oxides of nitrogen and of particulate materials.

The majority of diesel technology research and development today is therefore concentrated in the following areas: maintaining and improving fuel economy; reducing exhaust emissions to below present and future legislative limits; and reducing engine noise. And at the same time, maintaining and improving on the operating advantages of good reliability, low maintenance costs and long life.

Furthermore, the industry worldwide has become much more competitive, there is substantial overcapacity and many markets such as marine and agricultural machinery have been depressed for several years. Costs must therefore be held down while at the same time new engine models must be developed to a very high standard prior to release on to the market.

The need to develop greatly improved and more sophisticated design tools and techniques has been emphasised and this has fortunately been made possible by the availability of increasingly more powerful computers. The development of design technology programs for these computers is, however, another priority area.

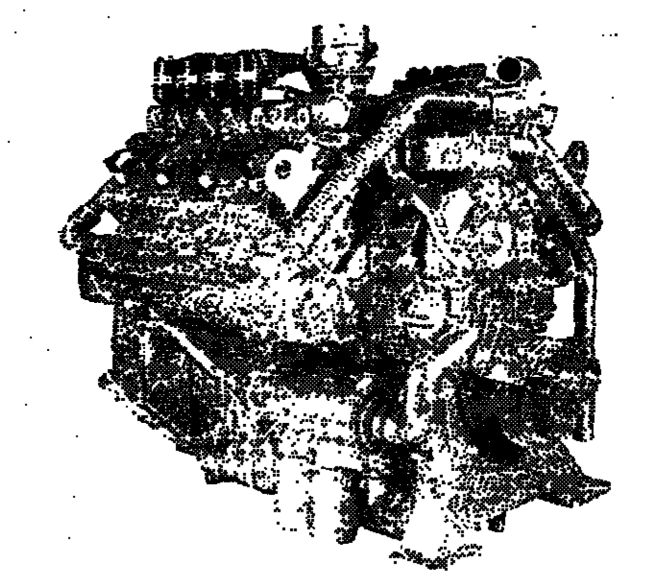
Despite the downturn in the industry, research and development levels would appear to have been maintained. There is every sign, however, that rationalisation of the industry will continue with technology research and development being carried out at fewer centres but continuing to include independent organisations such as Ricardo, the UK engine design consultancy.

Fuel economy improvements have largely been obtained by minimising the internal losses within the engine by, for example, the use of lower viscosity lubricants; reduced piston skirt areas; fewer piston rings; reduced bearing areas; minimising the capacities of lubricant and of coolant pumps and by increasing peak cylinder pressures.

Some years ago, initially in the US, with follow-up work in Japan, Germany, the UK and other countries, claims were made that substantial improvements could be made to the basic thermodynamic cycle by the use of engineering ceramics to insulate the combustion chamber and hence to reduce the heat losses. This claim has so far not been substantiated.

It is certainly possible to reduce the heat loss to the coolant in this way but the majority of such heat reduction goes to increasing the energy of the exhaust rather than being converted into available work. While a small part of the heat should go to giving increased engine power, and hence improved fuel economy, this gain can easily be offset by a worsening of combustion due to changes in the fuel/air mixing process. A second order improvement in fuel economy can moreover be obtained since the size of the cooling fan can be reduced.

In order to obtain improvements in fuel economy arising from the use of this so-called Adiabatic Engine it is necessary to employ a secondary power recovery device to obtain shaft power from the increased exhaust energy. Ideas which have been studied include the use of a turbine expander geared into the crankshaft and the use of a Rankine Cycle (steam or organic fluid vapour) device. While prototypes have been built, no production engines employing reduced heat losses are yet in production.

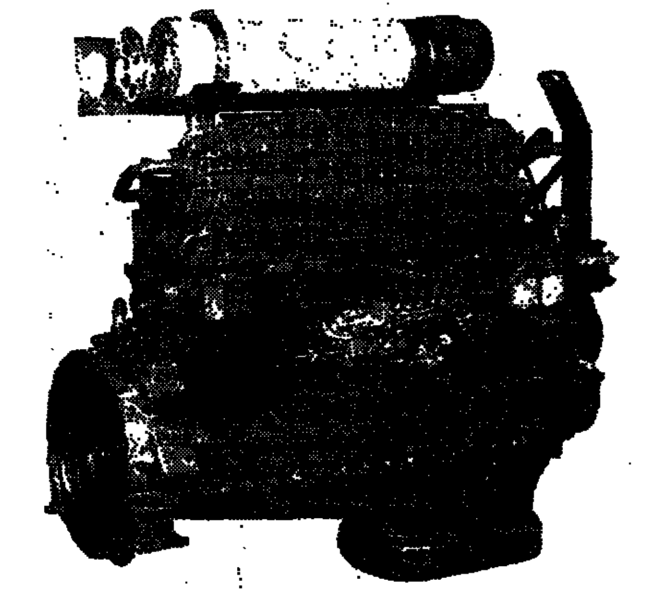


Large natural gas reserves mean more extensive use as a fuel is likely: Perkins 3008-SI spark ignition engine

The use of a geared exhaust turbine in association with a conventional turbocharger is, however, becoming more common in large marine diesel engines and seems likely to occur in other high-power engines such as those used in heavy duty trucks. Scania are now selling an 11-litre compound engine in the Swedish market. Large marine diesel engines employing a very long stroke with low engine speeds of the order of 70-80 rpm and a power recovery turbine are achieving thermal efficiencies of the order of 54 per cent.

The need to maintain good fuel economy and at the same time to reduce exhaust particulate levels and minimise NOx emissions has resulted in the use of higher and higher fuel injection pressures in order to shorten injection periods and to maintain good combustion over the whole range of engine operating loads and speeds.

Conventional pump/pipe/nozzle systems have been developed which are capable of delivering very high pressures. Others have concentrated more on unit injectors, combining the pump and nozzle in one unit without the need for a connection pipe. Still others are hoping to exploit the use of accumulator and pressure intensifier systems. For use in road transport applications, where wide ranges of load and speed are involved, it is likely that electronic control of fuel injection timing will be essential in order to achieve the complex map of timing with load and speed which is necessary to give very low levels of exhaust emissions under these conditions.



Turbocharging with intercooling is universally employed for large engines: Volvo Penta's 16-litre TID162AG

The use of high fuel injection pressures has made it possible to employ direct injection on wide speed range, light duty engines such as those employed in passenger cars, taxis and light trucks as demonstrated by Audi, Fiat and Rover.

Engine noise is, however, still a big problem and while this can be reduced by the use of turbocharging or by the use of a directly driven positive displacement supercharger in association with the use of two-stage or pilot fuel injection, there is no sign at the moment that direct injection will universally replace indirect injection which is currently by far the most widely used.

There has been some interest in the use of a mechanically driven supercharger in light-duty engines with the supercharger disconnected at low loads and speeds

Turbocharging with intercooling is universally employed for heavy duty truck engines and larger engines. While it was introduced in order to obtain increased power/weight and volume ratios, its use today is also required in order to achieve low NOx and particulate levels.

A question remains as to whether this use will also be essential in the long term in medium duty truck engines where naturally-aspirated engines are commonly employed. For the medium term (1990s), however, it seems likely that naturally-aspirated engines will continue to be widely used in, for example, Japan.

Where compact, high-power units are required, as for example in locomotives and particularly in armoured fighting vehicles, there remains an interest in two-stage supercharging and in the use of sequential turbocharging where the numbers of turbochargers in use on an individual engine is increased as the loading is increased. The cost and complexity involved, however, make it unlikely that wider applications will be involved.

There has been some interest in recent years in the use of a mechanically driven supercharger in light-duty engines with the supercharger disconnected at low loads and speeds. VW has, for example, used their G-Lader supercharger in this way. Such down-sizing of engines with increasing use of supercharging could become more widely used.

Apart from the US EMD locomotive engine and the larger bore marine engine market where the two-cycle engine reigns supreme, all of the current generation world's diesel engines employ the four-stroke cycle although numbers of two-cycle engines of earlier vintage remain in production, particularly in the US.

The presence of ports in the cylinder liner and the higher thermal loading associated with the two-cycle engine make it more difficult and hence more expensive to develop a reliable engine and the problems are accentuated today by the difficulty of maintaining the very low levels of lubricating oil consumption which are necessary for environmental reasons.

There is, however, a revival of interest in the possible use of two-cycle, span-ignition engines in smaller passenger cars.

Work directed towards the use of alternative fuels in diesel engines has been widely carried out over the past 10-20 years. Vegetable oils can be burnt but excessive fouling of the combustion chamber is likely to result, particularly with direct injection. Esterisation of the oil in association with methanol to give a monoester greatly reduces the fouling but the economics of the use of all vegetable oils is very suspect given current petroleum crude prices.

There is also an interest in burning methanol or ethanol in diesel engines in order to eliminate diesel particulates. Here again the economics are not attractive. In any case, alcohol fuels would be much better employed in spark ignition engines. Nevertheless there remains an interest in the use of heated glow plugs as ignition aids and work has been carried out in the past involving the possible use of high-energy, ignition-improving additives for the fuel.

Natural gas poses storage problems in transport applications but has been widely used as a fuel either with spark ignition or with pilot injection of diesel fuel. In view of the large international reserves of natural gas, much more extensive use of it as an engine fuel appears to be likely in the future.

Dr C. C. J. French is a past president of the Institution of Mechanical Engineers. He joined Ricardo Consulting Engineers in 1952 and is currently a director of, and engineering consultant to, Ricardo International.

Michael Haigh reports on recent developments in the industry

Sharp rise in regrouping activity

THE severe depression in the early 1980s created large amounts of excess capacity in a then highly expansionist diesel engine industry.

Throughout that decade there was a succession of restructuring moves by both independent engine manufacturers and engine-producing original equipment manufacturers (OEMs), particularly in the agricultural and vehicle sectors. However, it is difficult to see where significant reductions in production facilities have occurred.

PRS Consulting International's diesel database shows that the number of manufactures in Western Europe, Japan and the Americas has fallen by 37 or 17 per cent since 1982. The largest of these was GM's car operations in the US (peaking at 150,000 a year), killed by the collapse of diesel car demand in North America. The other 36 operations produced less than 60,000 a year in total, against output of some 9m engines a year in these countries.

The parallel process of regrouping has also been very slow to show any results. In the devastated agricultural sector, Case absorbed International Harvester's tractor operations. Today the Case and IH engine ranges have been replaced largely by Cummins B and C Series units. However, this was an expansion move into a lower power sector for Cummins. New facilities for B and C Series were established, together with the conversion of IH's Neuss plant in Germany to B Series production.

The most intriguing move of recent months also involved Cummins. Ford, Case IH and Kubota have invested a total of $250m to take a combined 26 per cent stake. This gives Cummins scope for more small commercial vehicle business in North America with Ford, at a time when it is suffering from a depressed market and falling market share in its key US heavy commercial vehicle business.

Despite the new Ford-Cummins link, Chrysler has extended its agreement to use B Series engines in its light commercial vehicles and Cummins will reopen its US Wariboro plant to meet this demand. There is also the prospect of some form of joint small engine production in Europe with Kubota.

In 1976, Fiat's Iveco commercial vehicle group took management control of Ford's UK truck operations. Since then, trucks from the Langley, UK facility have continued to be powered mainly by Ford Dover diesels. Only at the end of this year, with the introduction of Iveco's new Eurocargo truck range, will Iveco engines start to replace Ford Dover units.

This year saw completion of the agreement for Ford and Fiat to merge their agricultural and construction machinery operations under Fiat control. As a result, Ford's Basildon engines will be replaced by Iveco units. However, if Iveco Ford Truck is indicative of the pace of change, then it will be the second half of the 1990s before this is completed.

The Cummins and Iveco moves are just two examples of the sharp rise in regrouping activity over the past 18 months. Iveco is also a partner in a new style of co-operation involving Europe and Japan, which highlights the levels of technological and competitive pressures faced by diesel manufacturers.

With Nissan Diesel, a leading Japanese truck and engine manufacturer, a joint team of engineers has been established to develop a new range of six-cylinder, 6-8 litre, low emissions engines from scratch. Design work is nearing completion and the results, which are expected to be announced towards the end of this year, will attract great interest throughout the industry. Current plans are for the engines to be produced independently, but to share key components.

The pace of change in the industry is being accelerated by the struggles of car and commercial vehicle manufacturers to establish viable units which can compete in Europe and North America and face the spread of Japanese transplant operations.

Companies paint a black picture of the Japanese threat, but it represents an opportunity for European makers

Although the companies paint a black picture of the Japanese threat, it represents an opportunity for diesel manufacturing in Europe. The significance of the engine as a percentage of the car means that it cannot be imported for long, yet the volume of diesels required means that most must buy in Europe rather than establish manufacturing facilities.

Significant changes in the automotive sector with diesel implications include MAN and Volvo taking control of SDP in Austria's truck and bus operations respectively, and Iveco's control of Enasa of Spain.

Co-operation between Renault and Volvo has already resulted in a decision to supply Renault diesels for Volvo cars – replacing VW units. The latest car deal between Volvo, Mitsubishi and the Dutch government could also bring more engine business for Renault. Restructuring in Eastern Europe will also bring changes on diesel supply over the next few years.

In the marine sector, the most significant move has been control of Sulzer's diesel operations (now New Sulzer Diesel) passing to a consortium of Italian and German shipyards. This ends a long period of uncertainty for Sulzer, although the result may be less dramatic than the original plan, blocked by the German government, which would have merged it with the other big force in large marine engines – MAN B&W. The MAN-Sulzer deal looked like a stronger counter to the growing presence of Mitsubishi in the Europe.

Recently, marine licensing deals with East German shipyards have been established by both MAN B&W and Mitsubishi. The licensing avenue has been used in other sectors, notably by Perkins in North Africa, KHD and Caterpillar in India, and Ruggerini in Russia.

A spate of marketing agreements and new supply deals has been seen recently throughout the industry. Lister-Petter has significantly boosted the prospects for its new Alpha small engine range through agreements for Farymann to market them in Germany and Acme to do the same in Italy. DDC in the USA has extended its links with Perkins and now distributes the full range of Perkins products in North America. And Perkins has taken on the marketing of the Navistar 466 truck engine in all markets/sectors not served by Navistar. Among Japanese manufacturers, Yanmar has appointed Ducati (now part of the Cagiva Group) as its exclusive distributor in Italy.

In terms of direct sales, most interesting are VM of Italy's planned supply of diesels for the Chrysler leisure vehicle to be produced in Austria with Steyr, and Ford's supply of 20,000 1.8 litre diesels for Soviet-produced Moskovitch cars.

In the meantime, new facilities continue to be planned. For example, Yanmar is planning a new 200,000-a-year diesel engine facility 10 miles north of its current Nagahama engines facilities. However, according to Yanmar, this new plant will largely replace current facilities. It is primarily aimed at introducing the latest technologies and cost efficiencies to engine production, rather than adding big new capacity.

For the future, it will be interesting to see how the pressure for emissions reduction from diesel engines will change the picture over the first half of the 1990s. They represent an enormous challenge to engine manufacturers, particularly those who do not have a significant business base in the "leading edge" automotive sectors, and may well drive companies together at a faster rate.

Technology could prove to be a better catalyst for change in the 1990s than lethal competitive pressures, excess capacity and negligible profit margins were in the 1980s.

The author works for PRS Consulting International

DIESEL TECHNOLOGY 3

THE INDUSTRIAL MARKET

Recession has taken its toll

THE term "industrial" is used to describe those machine types not covered by the automotive, agricultural, construction or marine sectors.

It groups together a wide variety of equipment including material handling (forklift trucks and cargo handlers), portable compressors, refrigeration units (reefers), generating sets, industrial tractors, pumps, welders, aircraft tow tractors, sweepers and locomotives.

Most have been hit by the current recession as they are among the first elements of capital expenditure to be deferred as activity slows. For example, forklift truck demand in Europe is down some 25 per cent this year, despite the continuing buoyancy in Germany.

The grouping is of great significance, accounting for more than a million diesels a year – more than 10 per cent of the total demand, or just over 25 per cent of the non-automotive markets where most engine manufacturers operate. However, virtually all derive their core business primarily from the other sectors.

The only big exception to this is KHD of Germany with more than 55 per cent of its volume in the industrial sector, largely reflecting its strength in the compressor field. The secondary position of industrial demand means that the products supplied are generally tailored versions of engines for other uses, rather than original designs.

A dominant current concern is the demand to reduce noise and exhaust emissions which is coming from both original equipment manufacturers (OEMs) and machine users. They are pushing the engine manufacturers for "compliance" well before legislation is in place for off-highway uses.

This will be easiest for those companies such as Cummins and Perkins with a base in the automotive market and for those such as Yanmar which produce their own fuel injection equipment.

Portable compressors account for more than 50,000 diesel sales a year, with some 30,000 used in Europe. North American offtake is much lower because petrol power still dominates.

The emphasis is on simple, compact, lightweight, two-wheeled machines which can be towed behind a car or van.

The dominant engine supplier for smaller equipment has been KHD with its air-cooled ranges. More recently, its new 1011 air/oil-cooled range has been taken up by leading manufacturers such as Ingersoll Rand and Atlas Copco, particulary because its power and compactness allows them to produce a smaller compressor with the same air output.

Mr Keith Sutton, IR's general manager for Europe, Africa and the Middle East, believes that developments on water-cooled units such as side and sealed cooling systems will overcome the past problems of designing water-cooled engines into small compressors and will cope with the poor maintenace standards so often found in the plant hire sector.

The first sign of this change was KHD's introduction of the liquid-cooled 1011 range. By the mid-1990s he predicts that water-cooled units will have made significant inroads.

The materials handling sector is dominated by forklift trucks (FLTs). In purpose-designed warehouses, the special Very Narrow Aisle machines are all electric powered. However, the main type used by industry is the counterbalanced FLT which can be powered by batteries, liquid petroleum gas (lpg), diesel or petrol. Indoor use is mainly electric.

Elsewhere, the US remains strongly committed to low-cost petrol, while Europe has a much stronger tradition of diesel use. Currently, battery technology limits the use of electric units, with lpg and diesel dominating the higher weight and heavily-used trucks. In 1990, the European market for counterbalanced FLTs was some 90,000 units, split 60/40 between internal combustion and electric powered.

The wide use of FLTs in enclosed areas explains much of the pressure coming directly from end-users to clean up emissions before legislation. There is a growing market for after-fitment purification devices from companies such as Engelhard and Johnson Matthey. This is particularly so on lpg units for indoor use.

Diesel units for generating sets account for more than 300,000 engines a year worldwide. The continuing shortage of funds in the Third World has hit this sector, but developed world markets have held up well.

Recent attention has focused very much on Combined Heat and Power which recovers the heat losses of combustion to provide much greater engine efficiencies. Application is mainly for buildings such as hospitals and hotels, and swimming pools.

Gen sets use a wide variety of fuels, including town, natural, sewage and landfill gasses. Most of the gas engines are developed from a base diesel unit and thus offer additional

More traditional standby sets, originally used to provide power in the event of mains failure, have responded to changes in supply

business opportunities for the diesel manufacturers.

Yanmar For example, has developed gas fuelled heat pump units of 5-20hp for use in large houses and small commercial units. The company is producing 10,000 of these a year for the domestic market and is looking at their potential in the southern US and the Mediterranean.

More traditional standby sets, originally used to provide power in the event of mains failure, have responded to changes in electricity supply over recent years.

In Japan,
in a recent interview, Mr Noritada Oishi, managing director and general manager of Yanmar's overseas operations, gave an interesting Japanese perspective on the big world markets for industrial equipment. In the domestic market he sees a period of uncertainty resulting from the General Agreement on Tariffs and Trade (Gatt) pressures for Japan to open up its agricultural sector and allow rice imports. This has already shaken confidence and hit demand in both the agricultural and industrial sectors.

Full opening of Japanese rice markets would have a serious long-term impact on the domestic volume base for machines and engines.

Mr Oishi estimates that Yanmar has absorbed ⅔ of the exchange rate penalty through improved efficiencies and cost reductions, but will need another three to five years to absorb the last third.

Discussing the European market for small diesels, he reflected the views of many that water-cooled engines will gain ground at the expense of air-cooled units, mainly because of noise problems. Despite recent water-cooled products from Lister-Petter and Lombardini, he believes that Japan has the edge in the 10hp-30hp band. This stems from their many years of experience with water-cooling giving an edge on both compactness and low weight.

In North America, Mr Oishi sees good long-term prospects for diesel, despite low petrol prices.

With reefers and small construction equipment, the need to use one fuel-type in an operation has seen diesel adopted for the smaller equipment. Also in the marine sector, the swing to diesel has been pronounced. It is more debatable how rapidly other sectors will switch and he believes that this will be delayed at least until low NOx-emitting engines are introduced.

Michael Haigh

The author works for PRS Consulting International

Diesels have a number of intrinsic advantages over petrol engines, writes **John Griffiths**

Enhanced prospects for larger sales

ON occasions during the past year or so a large, red, rather old fashioned-looking Crown limousine has been observable pounding at 100-plus mph around the high-speed banking of Toyota's Higashi-Fuji test track on the lower slopes of Mount Fuji.

What lies beneath its bonnet is old-fashioned neither in looks nor concept. It is a prototype V6 diesel engine with a difference, being both a two-stroke and supercharged.

The advent of relatively high speed production car diesels from manufacturers such as Peugeot and Volkswagen since the late 1970s has already gone some way towards burying, in the minds of ordinary motorists, the notion that diesels are necessarily slow, noisy and smelly in relation to their petrol counterparts.

Toyota's S-2 diesel engine, and similar units under development by rival manufacturers, takes the process a stage further. The combination of a relatively low compression ratio – about 16:1 – with supercharging eliminates the audible "knock" associated with "ordinary" diesels. The fact that there are twice as many firing strokes per engine revolution compared with an ordinary four-stroke car unit, makes the engine at least as smooth as a petrol unit while at the same time bringing power up close to petrol levels.

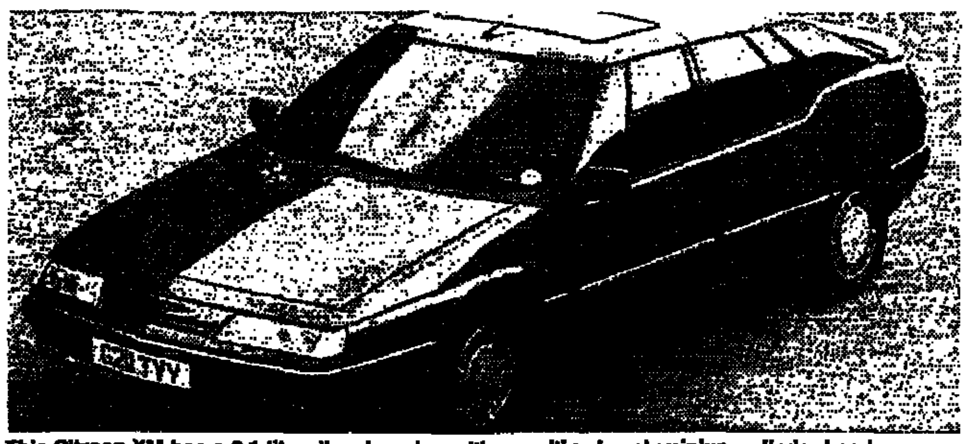
The big bonus of diesel engines remains: of fuel consumption at least 20 per cent better than that of a petrol engine.

That Toyota is not rushing the engine into commercial production is largely a function of its inability, as yet, to coax exhaust emisions down to compliance with the tighter pollutions controls being introduced in the US and elsewhere from 1994 onwards.

Toyota is confident, however, that the problem will be overcome. The S-2 diesel produces about the same amount of hydrocarbons, carbon monoxide and particulates as a conventional diesel, but only about one third the oxides of nitrogen which are linked with acid rain.

If the confidence of Toyota and other manufacturers proves justified, the prospects of diesel engines taking a larger share of car powertrains will be considerably enhanced.

Although the Toyota unit uses valves much like a four-stroke for its exceptionally high performance, other two-stroke units use piston movement to cover and uncover inlet and exhaust ports.



This Citroen XM has a 2.1-litre diesel engine with a multi-valve aluminium cylinder head

As a big new study of world trends in car power train development by the Economist Intelligence Unit (EIU)* emphasises, diesels have a number of intrinsic advantages over petrol engines:

Their higher compression ratios generate more heat in the mixture before combustion and convert more heat into useful work during it. Only the relative slowness of the diesel combustion process makes its actual power output inferior to a petrol unit.

Diesel fuel also contains about 13 per cent more energy by volume than petrol.

Not least, because diesels always run with wide open intakes – power is controlled by the amount of fuel injected – they operate with an excess of air so that exhaust emissions are, if anything, marginally "cleaner" than a petrol engine fitted with a catalytic convertor.

In the past few years, some manufacturers, such as Perkins with its Prima diesel fitted to Rover Group's Maestro and Montego models, have sought to popularise direct injection (DI) car diesels in place of more conventional indirect designs.

There is good reason for doing so, notably that fuel consumption typically is at least 15 per cent less than that of its indirectly-injected counterpart.

That DI diesels have not already taken over from DI units in cars – they are the conventional power unit for trucks – is a function of the difficulty of making them operate acceptably quietly.

However, the introduction by Lucas Industries of the UK and Robert Bosch of Germany of new types of slim, high-pressure fuel injectors in combination with cylinder heads designed to swirl the fuel mixture vigorously for faster combustion, is making the DI steadily less obtrusive.

As Geoffrey Howard, author of the EIU study points out, other measures such as keeping the glow plugs – used for starting from cold – operating during initial running continues to make the indirectly injected diesel ever more "civilised".

Just what can be achieved in this direction is illustrated by the Peugeot group which for its large, executive sector cars such as the Citroen XM has developed a 2.1-litre unit incorporating the world's first multi-valve aluminium cylinder head for a diesel, complemented by a turbocharger.

According to Peugeot, the XM so equipped is nearly 40 per cent more economical than the 2-litre petrol version. But both top speed and acceleration figures are virtually identical.

However, much development still remains to take place in the industry, through features such as electronic management systems for injectors and pumps and the reduced noise, exhaust emissions and the further increased power which should result.

World Powertrains for Passenger Cars. Economist Intelligence Unit Special Report No 2094, by Geoffrey P. Howard. Available from The Economist Intelligence Unit, 40 Duke St., London W1A 1DW.

DIESEL TECHNOLOGY 4

Andrew Baxter on design and development consultancies

Unsung heroes of the industry

AMONG the plethora of players in the world diesel engine industry, the independent design and development consultancies are undoubtedly the unsung heroes in the steady march of technological progress this century.

Many of the industry's firsts can be claimed by the small design houses which survive on work that big engine producers – and users – send their way. But due to the confidential nature of the relationships with their clients, they tend to crow about their achievements rather less audibly than the industry's big names.

Worldwide, there are dozens of companies in the field, but only a handful that can claim to view the entire world as their market. Many of the smaller companies, too, do not have the resources to offer a service that ranges from design and prototype building through to product development and advice on manufacturing.

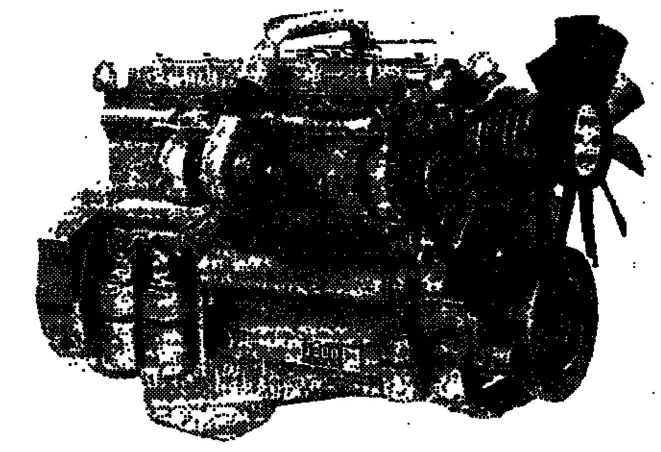
The big names in an industry of small fish are AVL of Graz, Ricardo Consulting Engineers of the UK, and the Southwest Research Institute in Texas. But there are also consultants such as the UK's Perkins Technology, owned by the big engine producer but insulated from its parent to enable it to offer other producers a service.

Like so much in the diesel industry, the automotive industry spurred the initial growth of the consultants and as early as the 1930s Detroit was finding it convenient to farm out some of its design and development work, and not only for engines.

Gradually the consultants have built up their own reservoir of expertise from the wide variety of contracts received, with the scope ranging from a very specific problem-solving exercise on a fuel injection system to the design of an entire engine.

The arrangement frees the big engine producers from having to invest in the facilities required to remain technologically competitive in all details of engine design. It also, of course, gives them much greater flexibility in times of reduced demand – cutting off contracts with consultants is a lot quicker than retrenching internally.

That is what, inevitably, is occurring in the current recession, and consultants are finding it much harder to win larger contracts, or seeing contracts stretched out by clients wishing to conserve funds. The consultants are also having to adjust to longer-term structural change in the relationship with big western clients, who are reducing the number of outside design houses with which they deal, in the interests of efficiency. Clients' own research and development divisions are also fighting harder to keep the work in-house.



Consultants such as Perkins Technology offer other producers a service. Above: One of the new Perkins 1300 Series engines – the 1306-76T

The response has been the beginning of a trend towards concentration in the engineering consultancy business, of which diesel engine design is but a small part. As yet, this has not gone very far, but it could accelerate if the smaller houses find the current recession too hard going.

There is, in any case, another argument for critical mass in the sector: the high cost of computer technology to provide computer-aided design and engineering services that clients consider vital in the battle to reduce product development lead-times. The days of the designer and his drawing table are drawing steadily to a close.

The UK has been leading the field in the trend towards concentration or co-operation. Last month, Perkins Technology and Tickford signed a joint marketing agreement giving customers access to Perkins' skills on compression engines and Tickford's on spark ignition – a marriage of diesel and petrol.

"Together we represent a major world force in all aspects of engine design, development, testing and production," says Mr John Thurston, Tickford chairman and chief executive.

Recent developments at Ricardo, which can boast one of the widest spreads of expertise in the industry, also illustrate some of the wider trends. Founded in 1915 by Sir Harry Ricardo, whose writings were long used as standard texts on the workings of the internal combustion engine, the former Ricardo Group is now part of Ricardo International. This, in turn, was formed last year following a merger with SAC International, creating the UK's largest publicly-quoted engineering design and development group. The rationale for the merger was to gain exposure to a broad range of businesses with different economic cycles.

But even within the old Ricardo, the company has been spreading its wings over the past four years, expanding in North America to deal more effectively with the big US market, and integrated engine design more closely with transmissions and the rest of the vehicle.

Ricardo's achievements go back a long way. In 1934, it designed the first passenger car diesel engine incorporating the then new Ricardo Comet combustion system, and recently designed a lightweight turbo-charged direct injection diesel engine as part of Volvo's advanced LCP experimental car.

Less obvious achievements, however, include emission analysis techniques developed by Ricardo chemical laboratories which are now used worldwide. This technological background is particularly important given the current emphasis on emissions reduction.

But emissions reduction work is only one of a number of services including prototype manufacture and noise control, and the whole gamut of computer-aided engineering from 3D finite element analysis to simulation. The company has invested heavily in computerisation since 1981, including producing its own highly-specialised software.

By serving clients in a wide range of sectors which use diesel engines, Ricardo aims to keep its eye on changing requirements and broad cross-sectoral trends. Profits from its contract work and – to a lesser extent – continuing technical support for clients help fund Ricardo's own research aimed at anticipating the industry's demands.

Ricardo designs more new diesel engines than any of its clients, so has greater incentive to develop the sophisticated tools needed to reduce product lead-times – or at least to maintain them as the engines themselves become more complex. This is especially important for diesel engine users and producers in technology-hungry developing countries.

It cannot, however, escape some of the woes currently besetting the diesel engine industry at large. With some engine producers cutting back on new product development, Ricardo is having to fight much harder for work, and there are fewer juicy long-term contracts. A broad geographical presence, too, is not always an advantage – in March, Ricardo International suspended a four-year £15m contract with the Soviet Union which had included the design of a new diesel engine for agricultural use. The client had run out of foreign currency.

Cummins: a wrenching restructuring in the mid-1980s with a revamped cost structure, retooled factories and prices slashed to maintain market shares against Japanese competition

■ PROFILE: Cummins Engine

Expansion and stability after a bumpy ride

THE past few years have been a bumpy ride for Cummins Engine, the world's largest independent diesel engine producer, with slashed dividends, red ink in the accounts and takeover speculation tending to dominate investor perceptions.

Hard-nosed Wall Street types have little time for arcane technical discussions about turbocharge, fuel injection and "particulate traps," but there is an undeniable link between Cummins' commitment to technological leadership and the corporate events from the mid-1980s onwards.

Mr Henry Schacht, chairman and chief executive, took the company through a wrenching restructuring in the mid-1980s, revamping its cost structure, retooling factories and slashing prices to maintain market shares against Japanese competition.

But an integral part of the shake-up – and perhaps a less noticed feature outside the engine industry – was a conscious move by Cummins to broaden its product range, expanding downwards from its 14-litre engine to lighter 10-litre, 8-litre, 6-litre and 4-litre models.

The company was also spreading its wings geographically, and both thrusts, says Mr Schacht, were designed to give Cummins a flow of dollars strong enough to support the spending on research and development that it knew would be necessary to remain competitive in an era of fast-increasing worldwide concern about emissions.

Unfortunately for Cummins, the restructuring was completed just in time for the start of a worldwide recession that began halfway through 1989, and from 1988 the company was diverted from its main task by the takeover speculation, seeing off Hanson and then Sir Ron Brierley.

In July last year, after winning many plaudits for its long-term outlook on product development, Cummins finally tied up a deal which many critics say should have happened years earlier in some form. Ford, Tenneco and Kubota agreed to take a combined 27 per cent stake in Cummins for $250m.

Apart from bringing stability at last to the share register, the deal gave Cummins an important new customer for its medium-duty engines – Ford switched to buying from the Indiana company rather than making its own in Brazil.

But the recapitalisation also allowed Cummins to maintain its R&D spending at $180m-200m a year, and Mr Schacht is determined to maintain this level throughout the recession – for which, he says with disarming frankness, there is no sign of an end in sight in all but a few of Cummins many product sectors, geographical markets or horsepower range

Chairman Henry Schacht: such spending is necessary

– 50hp-2,000hp.

Such spending is necessary, Mr Schacht believes, not only to address further restrictions on emissions in the 1990s but to give the customer cost-effectiveness as well. "Those companies not able to spend heavily will see their product fall behind in the mid to late 1990s, hopefully to our competitive advantage," he says.

Consequently, the thrust of Cummins' product development will be to avoid emission control solutions that may be possible technically but unacceptable commercially. Particulate traps, designed to catch soot emitted by diesel engines, may be a talking point in the European bus industry, but would be totally unacceptable in the US from a commercial standpoint, says Mr Schacht.

Cummins believes a more sensible, and practical approach is to concentrate on what Mr Schacht calls "managing the combustion event" itself rather than tacking on hang-on devices that clean up the by-products of combustion. This is why Cummins, along with its rivals, is putting so much R&D effort into the move from mechanical to electronic fuel injection systems.

The Indiana company, though, has a head start through its long experience of fuel injection and deeper involvement than almost all its competitors. Along with Detroit Diesel, Cummins is the only engine producer to make its own fuel injection system for heavy duty lines, the unit injectors whose history goes back to 1922.

Cummins' patented PT fuel system, introduced in 1952, has now evolved into an electronically-controlled version, and its latest initiative is the Celect injection system for truck and bus diesels, for which Cummins claims metering (fuel quantity injected per stroke) and injection timing are regulated more precisely and reliably than ever before.

Cummins is now working on the next generation of electronic fuel injection, and is also very interested in the latest developments at Bosch, the German components group from which it buys fuel injection systems for smaller engines.

Mr Schacht belives Cummins' ability to make its own electronics helps differentiate the company in increasingly competitive markets. But the company is also continuing to build on its pioneering initiatives in other aspects of engine design, such as turbocharged engines.

Cummins' latest 14-litre Command truck engine has increased fuel injection pressure and new Holset turbochargers to increase performance and driveability, but also features reductions in nitrogen oxide and particulate emissions of 17 and 60 per cent respectively, compared with the previous model.

"Being by far the largest heavy-duty producer in the world, and doing the research ourselves, we like to think we are the generators of many of the new ideas that go through the industry," says Mr Schacht. "We should be, for the money we spend. . ."

Andrew Baxter

■ PROFILE: MAN

Profits rise after reconstruction

MAN, the German engineering group, has had a good run in the past few years. After a painful period of reconstruction which followed the loss-making period of the early 1980s, its profits have jumped by more than 20 per cent in each of the past four years.

Diesels are only one of the products of MAN, whose activities cover trucks and buses, printing machinery, steel-making equipment and industrial plant, as well as steel trading. But the company has a long association with the history of the diesel, which now plays an important role in two of its main divisions.

In the 1890s, it worked with inventor Rudolf Diesel on the first practical applications of the engine. This was in Augsburg, where MAN today has a widespread operation which includes trucks and diesels.

The MAN concern, which has its corporate headquarters in Munich – it moved down from Oberhausen in the Ruhr as part of its extensive reorganisation – manufactures diesels both as part of its truck and bus operation (MAN Nutzfahrzeuge) and for the marine industry (MAN B&W).

Under Mr Klaus Götte, the group's chief executive, the group has completely overhauled its activities to improve efficiency and cut costs, as well as investing heavily in new equipment and products.

However, he has been thwarted in two areas, both affecting diesels. Although the shipbuilding industry has been in the doldrums in recent years, he foresaw rising demand for marine diesels. Thus he attempted to link MAN B&W's activities in this sector with those of Switzerland's Sulzer.

This was blocked by Germany's Federal Cartel Office, much to Mr Gotte's chagrin. The cartel authorities also intervened to stop MAN and Mercedes-Benz (the vehicle subsidiary of the Daimler-Benz group) from taking control of Enasa, Spain's biggest truck company. In view of the high cost of turning Enasa round, however, MAN must now be relieved not to have become involved.

Today, both of MAN's diesel operations are doing well. On the marine side, where units can exceed 70,000 horsepower, MAN B&W is profiting from improved business; it also makes engines for land use, such as energy generation, as well as exhaust gas turbochargers and power turbines for large-bore diesels.

In the group's financial year to June 31, 1990, turnover was 31 per cent higher at DM1.2bn, with the new order inflow growing at the same rate to DM1.6bn. Net profits totalled DM25m against a mere DM800,000 in 1988-89 and a loss of DM17m the year before. In the financial year just ended, for which full figures are not yet available, its performance improved further.

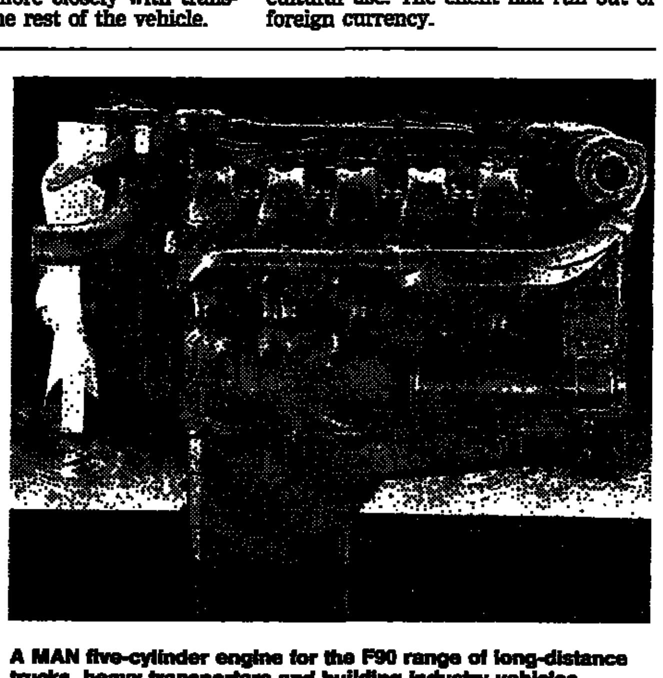
Altogether, MAN B&W employs around 5,500 people in Germany and Denmark. It also works with about 40 licensees, including big Asian manufacturers such as Japan's Mitsubishi Heavy Industries (MHI) and South Korea's Hyundai.

MAN acquired Burmeister and Wain (B&W), the Danish marine diesel manufacturer, when it fell into difficulties in the 1980s as the whole maritime sector was struggling. With MTU (also part of Daimler), MAN also has a joint controlling stake in SEMT Pielstick, the French diesel company.

MAN B&W's share of the slow-speed marine diesel market – accounting for most of the marine market – is now more than 50 per cent. Its massive diesel-electric engines power the QE2 cruise ship.

On the truck side, MAN's diesel engines are an important element in the success of this highly profitable division. MAN Nutzfahrzeuge's turnover rose by 12 per cent in 1989-90 to DM5.5bn (29 per cent of the group total) and new orders by 4 per cent to DM5.9bn; net profits were 52 per cent higher at DM147m.

Again, business was even better in the past financial



A MAN five-cylinder engine for the F90 range of long-distance trucks, heavy transporters and building industry vehicles

year, with turnover at around DM7bn, including the newly acquired Steyr trucks of Austria. With the opening up of east Germany, MAN experienced a further rise in commercial vehicle sales.

As customers have become more demanding, MAN has introduced more efficient engines, which also make less noise and do less harm to the environment. In the past 10 or so years, fuel use has been reduced by more than 30 per cent.

The truck division has also been working on the use of alternative fuels. At the start of this year, it brought out its first engine to use compressed natural gas (CNG), carried in cylinders.

MAN says it is the first truckmaker to use this form of fuel, which produces little noise or exhaust and has hardly any smell.

MAN buses have long been powered by methanol or liquid gas for public transport; the company has just shipped 300 buses with CNG-powered engines to Australia.

To meet increasingly demanding national requirements for noise reduction, notably in Austria and the Netherlands, the company has introduced its MAN-Silent range. Through combined improvements in the engine, gears, and axles, external noise on these trucks has been reduced by 84 per cent. Owners of existing trucks can also cut noise considerably by retro-fitting of special equipment.

Since other countries could well follow the Austrian and Dutch lead, manufacturers such as MAN are faced with a new challenge as well as extra market opportunities.

Andrew Fisher

■ PROFILE: Detroit Diesel Corporation

First company across the finishing line

DETROIT Diesel Corporation, which made the key technological breakthrough of electronics for diesel engines in the 1980s, is positioning itself to become one of the leaders of the heavy duty engine industry in the 1990s.

Last month, DDC was the first company across the finishing line in the race to develop an alternate-fueled heavy duty engine that will meet stringent new US emission standards. The new DDC engine uses methanol and won certification from both the federal Environmental Protection Agency and the even stricter California Air Resources Board.

Mr Roger Penske, the former Indianapolis 500 race car driver who is chairman of DDC, has thus shown he has as good a feel for corporate competition as he does for the track. Mr Penske has been in the driving seat at DDC since January 1988. His Penske Transportation Inc bought 80 per cent of DDC from General Motors, which retains a 20 per cent stake. It is a privately owned company.

GM had allowed the company to languish to such a degree that its market share of heavy truck engine sales had plummeted to just 3.2 per cent. Now, after an overhaul of the company by Mr Penske, the market share is running at about 25 per cent. Total sales are estimated at $1bn this year, up 20 per cent from 1988's $800m.

This is a remarkable about-face in a market shrunk by de-regulation of the trucking industry.

In the first six months of this year, sales of DDC's Series 60 engine grew 62 per cent in a market that is down by 30 per cent. Yet, DDC is aiming for even more. In a market of some 100,000 heavy trucks, Mr David Merrion, senior vice-president for engineering, says that production of the Series 60 will continue to rise from 1991's 25,000 to 35,000 next year.

Based on market share statistics for January through July, DDC has eaten into the slice of the diesel engine industry's top company, Cummins, while tying with its number two player, Caterpillar.

Market share of heavy duty truck engines

	Jan-Jul '91	31/12 '90
Cummins	39.52	45.7
Caterpillar	23.7	27.6
DDC	23.55	12.4
Mack*	12.69	13.8
Volvo	0.53	0.5

*Mack makes engines only for its own trucks
Source: Detroit Diesel Corporation

Ironically, the Series 60 engine, which has led the company's comeback, was developed while DDC was still a division of GM. The engine improved fuel economy, reliability and durability over its rivals. But it took Mr Penske's widely acclaimed skills of salesmanship and his firm grip on management to win back market share.

Perhaps because of his own experience as a driver and his current interest as a race team owner – his driver won the Indy 500 this year – Mr Penske has put enormous emphasis on teamwork at DDC. He has vastly improved management-union relations by directly communicating with his United Auto Workers union employees.

This entails meetings on the plant floor or impromptu visits with workers on the line unaccompanied by other managers.

Morale has been boosted, too, by a profit-sharing scheme that has put extra dollars in each worker's pocket for the last three years and by improved work conditions.

Mr Penske installed a new, bright cafeteria where, unlike before, both white and blue collar employees eat. And, with the help of some union funds, he also built a vast new training facility and health club on the grounds of the company's sprawling Detroit complex.

He also cleared away some of the corporate bureaucracy, sacking some 25 per cent of the salaried white collar staff.

At the same time, he turned his attention to customers, visiting them, identifying out their complaints, and offering free demonstration vehicles for up to a year.

This year, for example, DDC will not substantially alter the Series 60 engine, but it will make a series of changes in response to customer suggestions, such a a weight reduction of 40lb and relocation of the water pump to give less installed length.

Mr Penske also has infused his staff with the spirit of marketing. Even Mr Merrion in engineering feels that he now spends some 30 per cent or more of his time "selling."

The sell has had to be a hard one given a drop-off in big construction projects and a recession that pinched other DDC markets such as urban and inter-urban buses, industrial vehicles, marine pleasure craft and generators.

And while its engines won a quality award this year from the US Army Tank-Automotive Command and performed well in the Persian Gulf war, it is unclear how much Washington will spend on the military now that world security conditions have dramatically changed.

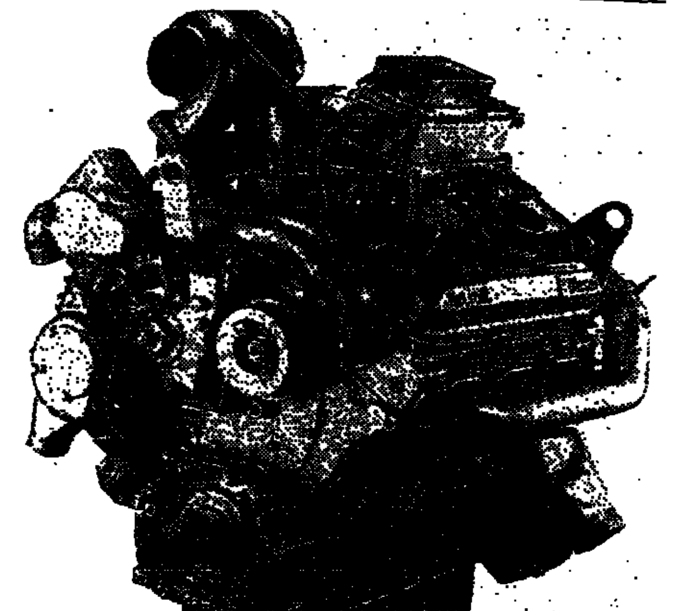
But, as US emissions standards tighten, Mr Penske appears to see the future in alternative fuel engines.

Apart from the methanol engine unveiled last month, DDC is also working on engines capable of operating on compressed and liquified natural gas, other alcohol fuels such as ethanol, coal slurry fuel, and a diesel hybrid engine.

The alternative fuel engines are primarily being developed for buses, where DDC has a market penetration rate of almost 90 per cent. But the company is also now exploring truck applications, including working with delivery vans for Federal Express and the Coors Brewing Company in a loading Xpeditor truck.

Yet this could be a risky strategy. The return on investment for developing alternative fuel and other innovative products, such as noise control devices, is unlikely to be immediate.

And, says Mr Gregg Macosko, an automotive industry analyst with Eastern Consultants, if DDC's market share on the Series 60 doesn't continue to rise "it will take the bloom off the rose."



A new alternate-fueled engine: the methanol-powered 6V-92TA from the Detroit Diesel Corporation

But Mr Merrion, the company's representative on the national advisory group called the Alternative Fuels Council, says that Washington's goal will be to have one quarter of the total vehicle road miles travelled by alternative fuel vehicles by 2010.

This would not be applied to all classes of vehicles and long-haul, over-the-road heavy duty trucks would likely be the last to be required to comply. But he believes that legislation is moving in that direction. And DDC is already racing down that road.

Barbara Durr

David Andrews takes a look at the role of diesel engines in power generation

Cheapness, high efficiency and low maintenance costs

TRADITIONALLY, diesel power has been the prime mover for stand-by generator applications up to several megawatts, and base load generation for demands of several tens of megawatts.

The reasons for this have been the relative cheapness of the prime mover, its high efficiency, (compared to gas turbine and steam plant) and low maintenance costs, coupled with the relative portability, storability and the safety of the fuel compared to, for example, gas or petrol.

For stand-by and emergency generators for use in buildings, high-speed engines are widely available from various manufacturers such as Cummins, Dorman, Deutz, Caterpillar, Perkins, up to about 2MW, with speeds of about 1,500 rpm.

These offer the lowest installed costs of any widely available prime mover (petrol being the only exception) – typically £130 per KW, modularity, lightness, compactness, and availability as complete standard packages.

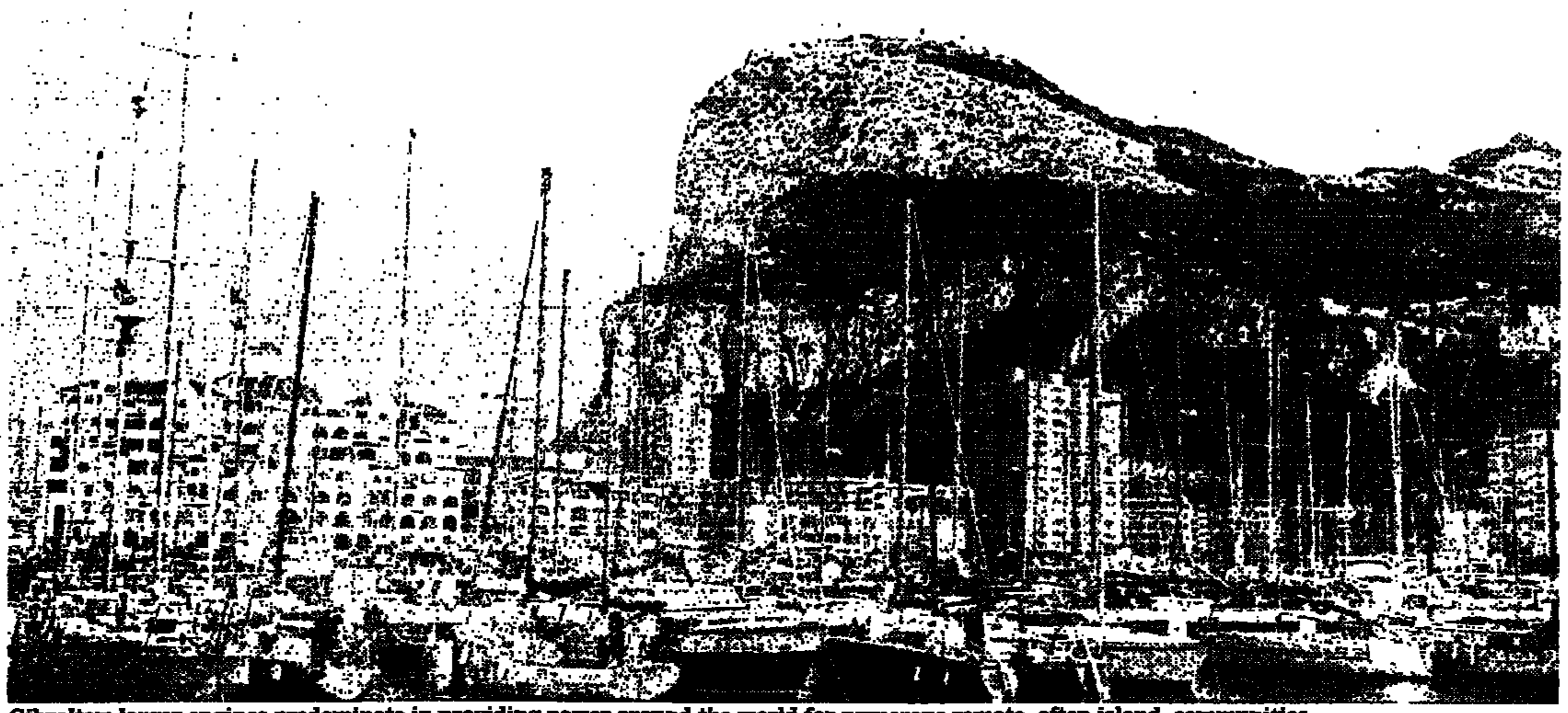
Fuels are invariably high quality distillate. The overwhelming advantage of this type of engine for stand-by compared to say a gas turbine, apart from higher efficiency, (35 per cent versus 20 per cent) is the start-up time.

A good high speed engine would be able to start first crank, 999 times out of 1,000, and start accepting load within 10 seconds, delivering full load within 30 seconds – gas turbines, (beloved of consultants and academics), assuming that they start first time, can take up to two minutes to begin accepting load, with several minutes' delay between each start attempt, should the turbine stall.

Diesel engines share with gas turbines very good load acceptance and response to fluctuating loads – a good generator package would recover from 100 per cent block load on a hot engine within two seconds. Gas engines, on the other hand, have much poorer frequency response.

Gas engines have the further disadvantage of being heavier and more expensive, and have longer start-up times to full load.

High-speed-type British engines are frowned upon by many in the UK for base load duties, but this betrays lamentable ignorance.



Gibraltar: larger engines predominate in providing power around the world for numerous remote, often island, communities

Cummins, Detroit Diesel, Waukesha, Caterpillar have been used around the world for base load generation for small communities with high dependability for more than 30 years.

Organisations such as Canada's North West Territories Power Corporation routinely uses high speed engines to power remote communities through the Canadian, eight-month, minus 30 C winter.

Up to about 10MW, the choice and controversy is between low and medium speeds. Again we find consultants and many users adopting conservative attitudes, with medium-speed manufacturers claiming the advantages of cost and reliability and compactness.

Surveys conducted by the Institute of Diesel And Gas Turbine Engineers indicate that the failure rate for low-speed engines (500-750 rpm) is around one every 2,000 hours, whereas medium-speed manufacturers claim mean time to failure of 10,000-15,000 hours.

But the slow-speed engines seem to take more market share. These larger engines predominate in providing power around the world for numerous remote, often island, communities. Old colonial names come to mind, such as Gibraltar, Barbados, Turks and Caicos Islands, along with transmitter and satellite earth stations.

The advantage these slow- and medium-speed engines have over high-speed engines is the ability to run on heavy fuel, although the deteriorating quality of this fuel, and the attendant higher maintenance costs are rendering it increasingly questionable. The high sulphur content is also an environmental issue of increasing concern.

Slow- and medium-speed engines are more efficient than high-speed – 40 per cent versus 35 per cent and have lower life-cycle maintenance costs, say 0.35p per kw hour versus 0.5p per kw hour.

Claims by manufacturers such as Caterpillar, Ruston and Wartsila to have produced a medium (1,000 rpm) engine running on heavy fuel were and still are treated with scepticism by many users and consultants, but the ample experience built up around the world by these type of engines is testimony to the skill of the designers and the materials they chose to overcome the problems in burning this most difficult fuel.

Beyond the 10MW size, there are the large and very large, with outputs of up to almost 50MW now available from MAN and New Sulzer Diesel, with pistons up to 900mm across, and with speeds as low as 90 rpm.

Since the smaller engines are made in much bigger quantities than the large engines - Caterpillar makes diesel engines with output equal to the entire UK national grid - there can be production economies

These types of engine are mainly designed for marine propulsion and are highly reliable, able to easily burn heavy fuel, and are extremely efficient – more than 50 per cent.

The big disadvantage of these monsters for power generation, say the smaller engine manufacturers, is that for a load say of 50MW, perhaps three 25MW engines would be specified – with at least one complete 25MW engine kept in reserve to cope with outages, meaning an installed capacity of 75MW.

To meet the same load with 11 smaller 5MW engines means only one 5MW engine needs to be kept in reserve: the plant margin can be kept much smaller, even though there will be a penalty on efficiency and maintenance costs.

The multi-engine route, can cope with less then peak load by keeping all engines except one operating at full load.

The monster engines do not like part loading, and efficiency and maintenance suffers, according to the mini-power station fans.

Since the smaller engines are made in much larger quantities (Caterpillar each year manufactures diesel engines with output equal to the entire UK national grid – 30,000 MW) than the large engines, economies of production can be brought to bear rather than often illusory economies of scale.

Around the world, diesels of whatever persuasion, for power generation can look to a rosy prospect – in the less developed countries environmental issues will be many years behind the current pre-occupation of the rich west, where concerns about nitrous oxides (NOx) and unburnt hydrocarbons predominate.

The World Bank and the aid agencies are increasingly recognising the economic and practical madness of the Third World following the west in terms of highly centralised power plant, based on large coal and gas turbines.

Apart from the higher capital cost, there is the sheer difficulty of keeping the distribution network free from the ravages of climate and those who steal the network itself to stay alive.

For these countries, local diesel power, close to the load, is the only sensible and economic choice.

In the affluent west, the diesel for baseload generation, particularly with heavy fuel, faces a less uncertain future due to emissions.

For the time being, and the foreseeable future in the UK, tight emissions limits can be met, by manufacturers – careful injector design, and reduction in crevice volume reducing the white smoke problem, for example. But the big problems are NOx. One method of NOx reduction is the use of a three-way catalyst and ammonia injection but this is very expensive.

Some manufacturers are looking at water injection.

Nevertheless, bearing in mind that legislation is unlikely to be retrospective, and that current designs can easily comply with the latest UK limits, there does seem to be a significant market for heavy fuel engines, in mini-power station mode with heat recovery, the value of the recovered heat off-setting the cost of NOx reduction.

Another growing market pioneered by Caterpillar, with Cummins now entering the fray, is the concept of the Power Module.

These are mobile, transportable power units, complete with factory-fitted utility grade cooling, fuel supply, fire control, breakers, protection, and automatic controls to allow paralleling with the grid.

They are based around the highly successful high-speed 3500 engine, and are available fully installed for about £150 per kw which is far less than the cost of new central power plant, at £550 per kwe, say, for a CCGT (Combined Cycle Gas Turbine).

Caterpillar has had considerable success selling these to American utilities to cut peak generation costs, and to delay reinforcement.

In the UK, Caterpillar dealer H Leverton has had interest from several large power users in this concept.

Other uses allow the operation of sub-station loads, temporarily cut off during maintenance. Caterpillar's constant attempt to go direct to the users, and cut out the independent and often indifferent packager, is based on the argument that these portable mini-power stations are made with parts with guaranteed 48-hour availability through the legendary Caterpillar spares system – something the packagers cannot meet.

Based round the heavy fuel-burning 3600 medium-speed engine, the Caterpillar modular power plant concept is gaining a lot of attention worldwide – particularly in eastern Europe – these fully pre-packaged units are again fully factory-assembled and are delivered in three ready-to-run containers by low loader, in bites of 6MW.

Complete mini-power stations, up to 35 MW each, fully containerized, are available based on this concept for around £250 per kw, fully installed, and deliverable in months rather than the years for a new central plant such as a CCGT.

When line losses and own use are taken into account, these gas or heavy fuelled plants offer cheaper power to the user than from a CCGT.

Again worldwide surveys by organisations such as the UK's Institute of Diesel and Gas Turbine Engineers show that these kinds of plant can achieve significantly better availabilities than central plant – 97 per cent is achievable – way above a coal plant's 65 per cent, and arguably beating a CCGT 95 per cent.

The author is an energy consultant specialising in mini-power stations

DIESEL TECHNOLOGY 6

Allan Rawnsley looks at the construction machinery industry

Sales drop in difficult times

THE European construction machinery industry, Germany apart, is despondent, with sales in 1991 plummeting compared to the high levels achieved in 1990.

According to The Corporate Intelligence Group, output of construction equipment in that year – the vast majority of it utilising diesel engines – peaked at about 200,000 units. KHD Deutz were the market leaders in this sector, contributing some 28 per cent of overall demand.

Attempting to maintain this leadership, Deutz are investing $343m in a new plant alongside the existing research and development centre at Cologne-Porz, to produce the air/oil-cooled 1011 series. This engine is gaining widespread acceptance with German off-highway equipment builders and is also appearing in mobile compressors, particularly with Atlas Copco, Deutz's single largest customer in the construction sector.

The Porz plant will also be used to manufacture the two new-generation liquid-cooled engine series covering the 45kW-190kW power range, due to be officially launched this autumn as the 1012 and 1013 ranges. These are intended to replace the ageing 912/913 series, which are popular construction equipment engines.

Two assembly lines are being laid down with an initial combined capacity, depending on the model mix, of between 130,000 and 150,000 engines annually.

The move away from air-cooled engines is a radical change for Deutz and is brought about by the ever more stringent environmental regulations envisaged through the 1990s. The new units are designed to have exhaust emissions below even the future EC threshold limits, and are claimed to rank among the world's most "de-noised" construction equipment diesels.

Yanmar may be the first Japanese diesel engine builder to have its high-speed engines made in the EC

Noise and vibration were given as two of the reasons why one of Germany's leading manufacturers of construction machinery, O&K, signed a five-year contract with MAN for own-branded, water-cooled engines in the 45kW-300kW power category. Previously, MAN had been virtually unrepresented in this sector of the market.

The replacement of Deutz engines started earlier in the year for medium weight hydraulic excavators. Completion of the change, for relevant models, is scheduled over two years, due primarily to the re-engineering requirement, but also to allow for further development of the product range.

In the UK, as a result of EC noise directives, both Thwaites and Benford introduced de-noised engines into their site dumpers during the course of 1990. Thwaites replaced Lister air-cooled units with Perkins 100 Series engines for European customers and the Deutz air/oil-cooled 1011 family for those clients not prepared to change to water-cooled engines.

Perkins Engines have had similar success with the Anglo-Japanese 100 Series for powering JCB mini excavators and some CompAir single-tool mobile compressors. Nevertheless, the majority of mini excavators built in Western Europe – about 11,500 units in 1990 according to The Corporate Intelligence Group – utilise engines wholly manufactured in Japan. Kubota, Nissan, Isuzu, Mitsubishi and Yanmar are the principal diesel engine suppliers.

Following the marketing link signed with Navistar Internat ional Transportation Corporation in 1990, Perkins have recently launched the 1300 Series engine, which fills the gap between the Phaser (or 1000 Series) and the Eagle (or 2000 Series). The six-cylinder 1300 Series is aimed specifically at the construction machinery, forklift truck and generating set markets. The new series is turbocharged to minimise harmful exhaust emissions and covers the 135kW-205kW power bracket.

It is clear that exhaust emissions legislation will pose ever greater challenges to the diesel engine industry

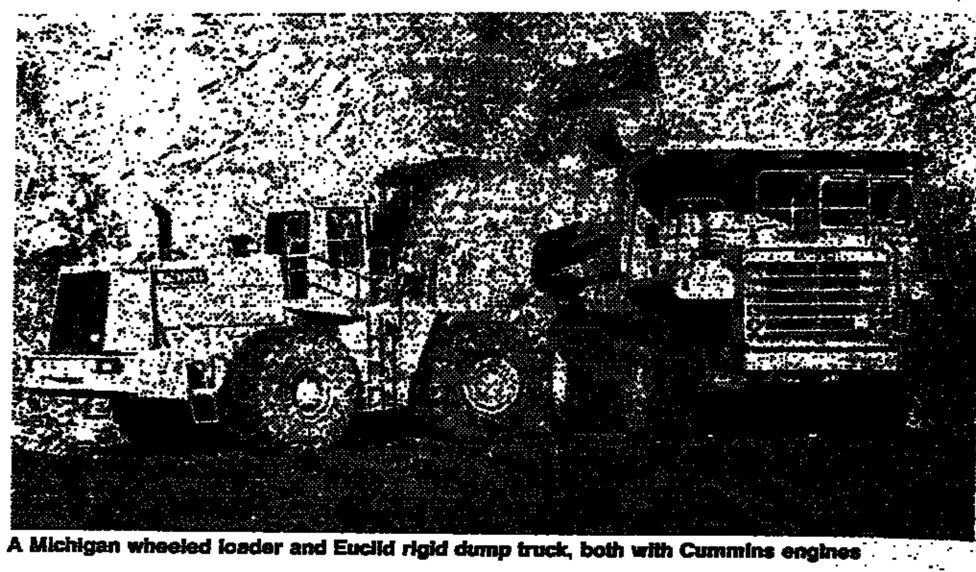
Yanmar may well become the first Japanese diesel engine builder to have its high-speed engines manufactured in the EC, if the newly-forged link with Italian engine builder Ducati fulfils expectations. The partnership, announced at the beginning of the year, is planned to progress from the importation of built-up units for Italian customers, to full-scale production for EC distribution by the end of the decade.

Initially, the Yanmar L and TN series, covering the 2.5kW-70kW power range, will be represented. Efficient and compact units, they are popular with small construction machinery builders in Japan.

An important factor behind the Kubota investment in Cummins Engine equity, in 1990, is access to the Cummins bank of information and expertise in controlling exhaust emissions for on-road and off-highway vehicles. Future collaboration seems likely to develop the emissions technology further. Kubota also plans to set up an engine manufacturing facility within the EC, to serve both its Spanish tractor operation and German mini excavator plant. Engines for both these plants are presently imported from Japan.

It is clear that exhaust emissions legislation will pose ever greater challenges to the diesel engine industry, although the timing and exact details for off-highway applications have yet to be determined. European manufacturers of diesels have been investing heavily to build up the necessary technology ahead of the imminent legislation.

One approach has been the introduction of digital electronic governing for agricultural and construction machinery engines. This allows basic engine parameters such as speed, power, fuel flow and timing to be finely controlled. The data obtained may also be passed to other machine components having integrated electronic systems, so as to optimise machine efficiency in virtually any working environment.


A Michigan wheeled loader and Euclid rigid dump truck, both with Cummins engines

It also provides the means for diagnostic maintenance, which will serve to offset the apparent increase in complexity, and is expected to become widespread in Europe during the course of the 1990s.

Cummins has developed its venerable 14-litre engine to comply with the stringent Californian regulations and is now in US production. It incorporates the Celect Electronic Fuel System which controls fuel metering and injection timing to optimise the thermal efficiency of the engine. This is achieved through more complete combustion, thereby reducing the level of exhaust pollutants. However, it is not yet being adopted as the norm for European customers.

SAME, the Italian tractor builder, is the first European engine builder to fit digital electronic governing as standard. The new 80kW-95kW rated 1000 engine family, which also incorporates dual air- and oil-cooling, powers the recently announced high-horsepower line of farm tractors.

The changes brought about by the merger of the agricultural and construction machinery interests of Fiat and Ford, to form N. H. Geotech, are still in progress. Fiat holds an 80 per cent stake in what is now the largest agricultural tractor manufacturer in the world, in terms of units sold. The former New Holland Basildon plant, with its 2,800 employees, is set to become the premier source of engines for the new group.

New models are widely anticipated by the market, which should not be disappointed before the close of the year, as the group further exploits its access to more than half the 1.2m units-a-year global tractor market.

The author is an international marketing consultant specialising in diesel engines.

MARINE ENGINES

Growing environmental controls

CONSIDERABLE progress has already been achieved by engine designers in cutting specific fuel consumption (SFC) rates and adapting to the poor quality fuels which are now the staple feed of the large marine engine.

Thermal efficiencies greater than 50 per cent have been reached, and efforts to further reduce SFC at full-load conditions are approaching the area of diminishing returns.

But growing environmental controls, and the increased importance attached to the part-load performance of modern high-efficiency machinery, have stimulated new attention to the fuel-burning process across the power profile.

Shipowners' high expectations today relate not only to the efficiency of the propulsion plant, but increasingly also to its reliability and lifetime upkeep costs. Accordingly, further improvements in reliability, extended times between overhauls (TBOs), and reduced maintenance requirements are key development goals for every licensor. These factors have assumed great importance in the light of reduced manning and other changes in shipboard organisation.

Exhaust gas emissions will emerge as an increasingly important design criterion in the 1990s.

Expenditure on research and development was maintained during the shipping market's lean years by German-owned MAN B&W Diesel, and Winterthur-based New Sulzer Diesel, which together command about 90 per cent of the world market for large, two-stroke marine propulsion machinery.

New Sulzer Diesel's current standing in both the two-stroke and four-stroke sectors, under the new, primary ownership of Italy's Fincantieri Group and Germany's Bremer Vulkan and Deutsche Maschinen under Schiffbau (DMS) vindicates the wisdom of the sustained commitment to R&D.

R&D activities in the fields of materials, tribology, fluid dynamics, noise analysis, corrosion and chemistry continue to benefit from NSD's co-operation with Sulser Innotec, the central research facility of the Sulzer Corporation.

The RTA84T engine, latest addition to its low-speed RTA range, represents an important breakthrough by providing for efficient vessel operation at shaft speeds as low as 54rpm. This better matches the trend in large tanker and bulker design towards larger propeller diameters and slower propeller speeds.

It extends the concept of flexible engine setting introduced with variable injection timing (VIT) to include variable exhaust closing (VEC) and load-dependent cylinder cooling. Principal objectives have been gains in flexibility under all power load conditions, making for greater part-load economy, and high reliability.

Savings in fuel consumption in the order of 5 per cent are promised for the new type, which develops up to 5,280bhp (3,880 kW) per cylinder at 74rpm, and is available in five- to nine-cylinder format to give a power range from 26,400 to 47,520bhp (19,400kW to 34,920kW).

The first engine is to be manufactured in Japan by Diesel United for installation in a new Japanese VLCC crude carrier next year.

The RTA84T incorporates sophisticated operating features deriving from practical investigations conducted on the 4RTX54 research engine at Winterthur. The operating parameters of the RTX include a maximum cylinder pressure of 180 bar at a mean effective pressure of 20 bar, and a 4.0 stroke/bore ratio, as a means of exploring future possibilities in terms of power concentration and component performance.

The main idea behind the RTX project was to create a research engine that was, in many respects, more advanced than a possible next generation, production design, and to apply the knowledge gained from this project, in part or in full, to later series-built engines.

While ever-larger propeller sizes in the tanker and bulkship sectors have underpinned the move to ultra-long-stroke machinery with slower running speeds, limits to propeller size imposed by Panama Canal dimensions, and other draught constraints on increasingly large container ships have necessitated a different engineering approach. This has entailed the development of machinery that can run faster so as to deliver the enormously high power ratings required.

Two of the largest diesel engines ever ordered, in the shape of 62,400 bhp (45,840 kW) units are under construction in Japan

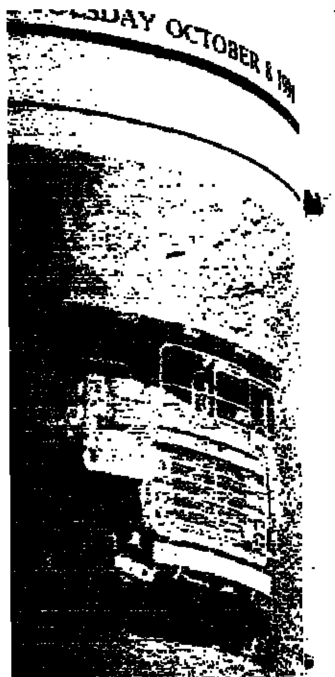
MAN B&W reacted promptly to the new demands from this sector of the market. Initially, it modified its successful L-MC engine to incorporate a shorter stroke, and subsequently introduced the MC-C version of certain models in its two-stroke range. In aiming for the optimum power/speed combination, a revolution range of 89-104rpm was chosen for the resulting K80MC-C and K90MC-C types, based on extensive market research involving shipowners, shipbuilders and propeller manufacturers.

The across-the-board upratings announced in May by MAN B&W for its low-speed, two-stroke range take the MC series to an upper power limit of 70,430bhp (51,800kW).

Current manufacturing activity in the Far East includes two of the largest diesel engines ever ordered, in the shape of 62,400 bhp (45,840 kW) units to be installed in container ships under construction in Japan for the Rotterdam-based Nedlloyd Group. The power units are 12-cylinder models of the RTA84C design unveiled by Sulzer three years ago.

Meanwhile, four-stroke machinery predominates in the propulsion market for smaller merchant vessels as well as in the ferry and RO-RO sectors, and provides the basis for diesel-mechanical and diesel-electric installations in modern cruise ships.

Ron Lawler



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OFFICE TECHNOLOGY

The promise of a decade ago – of the paperless, automated office – has yet to be fulfilled, writes **Della Bradshaw**. If Europe's white-collar productivity is to improve, offices need to combine elements of technology already in disparate use in an overall plan

Need for an overall plan

FOR MANY, the way offices are organised has hardly changed since clerks in Charles Dickens' day scratched away with quill pens in dingy back offices, producing letters and contracts.

The promise of a decade ago, that the automated office was just around the corner, has yet to be fulfilled. And the increased efficiency of the paperless office is still a dream of the future.

Nowadays, European office workers create 3.5bn sheets of file paper – 45 sheets each – every day, according to research from the Association for Information and Image Management in the US. In addition, there are 800m sheets of computer print-out, 300m photocopies made and 100m letters written in Europe every day.

Even more depressing is that, while the manufacturing sector has benefited dramatically from the implementation of technology, similar gains have failed to accrue in the office. During the 1980s factory productivity in Europe increased by about 75 per cent. White-collar productivity, meanwhile, improved by only 3 per cent, according to the OECD.

The problem, says Mr David Best, a partner at management consultants Touche Ross, is that most office managers automate single tasks – they might buy a new personal computer, a faster photocopier or a quieter printer – but they fail to automate the complete process.

"You would never dream of automating a factory by giving each worker a faster machine tool and not connecting it to the production process as a whole," says Mr Best. "But in the office that is exactly what we do."

Mr Bernard Fournier, managing director of Rank Xerox, makes the point that 90 per cent of information technology investment has gone into managing data, while 90 per cent of information is still held on paper documents. "Applications like data processing, word processing and spreadsheets only automate tasks," says Mr Fournier. "The way that information is structured, communicated and moved through the office has remained largely unchanged."

For example, facsimile machines can send documents in seconds to the other side of the world. But often the fax ends up in a central postroom and waits there for hours while someone sorts out the sheets of paper and delivers them to the appropriate person.

This, says Mr Peter Crook, divisional manager for the financial and professional sectors at Wang, is why achievements in office efficiency have been "devastatingly poor". The principal reason why processes are not dealt with, he says, is

"The way information is communicated and moved through the office has remained largely unchanged."

that they involve all sorts of things which are difficult to automate – and, not least of them, people.

As Mr Best says: "Technology is the easiest bit, it's the interaction of people that is difficult." What tends to happens in a typical office, he says, is that, for example, a solicitor uses his or her PC to get data from the central database. This is then circulated on paper. The firm's senior partners read it over and then create a dossier on the subject. Then action is taken on the dossier.

"The job is seen as slices determined by the people that do it, not the process involved," says Mr Best. "The whole thing needs to be turned on its head and viewed from the other end of the telescope."

According to a recent survey* from the management consultancy division of Touche Ross, in conjunction with the Institute of Administrative Management, the most successful office automation projects are those where the technology is used as a tool to achieve a business objective, where the plan has the support of top management and where the introduction moves hand-in-hand with vocational training – although such projects are few and far between.

The report says that in nearly 80 per cent of cases office automation has been aimed at administrative and clerical workers in a company. Many companies introduce word processors, says the report, and then managers believe the task is complete and sit back complacently.

Mr Crook holds up as a good example of process automation that of just-in-time manufacturing in factories, and believes offices should be "re-engineered" in the same way. "That of course is a bit of a joke as it suggests offices were engineered in the first place, which of course they weren't," he adds. "They grew organically."

One benefit in re-engineering the office would be to make it easier to spot the breakdown in processes. "In manufacturing if a stage breaks down, you can spot the problem," says Mr Crook. "In an office, you can't do that. In an office your working stock is people, and generally you just throw more people at the general problem."

Manufacturers believe that the recession has lent credence to the process automation approach

Manufacturers such as ICL and Wang, and information technology consultancies such as Touche Ross, have developed methodologies and software products to enable commercial companies to carry out this re-engineering.

Called, variously, "business process management", "procedure processing" or even "process processing", their aim is to help offices analyse how they work and look for improvements. Then a new "workflow" process is devised and the technology implemented.

Many of the elements of technology used are already in disparate use today, such as databases, word-processing and electronic mail. Recent developments, such as document image processing and the ability to send faxes directly from the screen of a networked PC have contributed to the overall plan.

In an insurance company, for example, once a claim form is received, it can now be scanned into the system, labelled and then sent directly into the queue of the person who deals with those issues. If there are several people who deal with initial claim forms, an "intelligent" system would look at the queues of the relevant staff and allocate the letter to the shortest queue.

Some emerging technologies could consolidate the position. If voice messaging technology could be merged with text processing – enabling a dictated message to be tagged to a complex chain of correspondence – the whole package could travel round the system together.

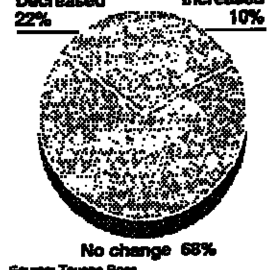
Looking further ahead, the next buzz phrase in automating the office could be "issue management" says Mr John Dicks, of ICL, the UK-based computer maker now owned by Fujitsu of Japan. Rather than automating a process, this approach would look at specific issues – what to do if your rival introduces a phenomenal new product, for example.

Surprisingly, perhaps, manufacturers believe the recession in the US and Europe has lent credence to the process automation approach. "These days I'm sure that no company can afford to have people who are not entirely productive. If people are very productive doing the wrong job it's no use," says Mr Derek Puplett, product marketing manager for Olivetti Office. "It often doesn't need a new PC or hardware, it requires the correct procedures."

In the final analysis, though, will this type of process automation actually reduce the amount of paper in the office? "Eventually, it will mean dramatically less paper, of that I have no doubt," says Mr Crook. "The need is to design a process which does away with paper."

**Office Automation, the Barriers and Opportunities. Touche Ross, Hill House, 1 Little New Street, London EC4. Price: £45.*

Office Automation: effect on staff numbers



Source: Touche Ross

Editorial Production *Gabriel Bowman*
Illustration *Jovan Djordjevic*

OFFICE TECHNOLOGY 2: *Office Computer Systems*

Joia Shillingford looks at PC networks

Gains and losses

"IT COSTS half as much to get an application up and running on a personal computer (PC) network as on a minicomputer," says Dr Gordon Ross, European director of Microsoft's consultancy division. And it is not just software development which costs less. It is also considerably cheaper to buy and maintain PCs.

Such cost savings help to explain why networked PCs are replacing the traditional minicomputer in the office environment. How have companies made the changeover, and what have been the benefits and drawbacks of "downsizing"(the practice of moving to smaller systems)?

Cost savings. Building company Geoffrey Osborne switched from minicomputers to PC networks a few years ago. The company outgrew its IBM 36 minicomputer in 1987 and IBM was encouraging it to upgrade to the more powerful AS/400 minicomputer.

This would have cost up to £1m because the machines have different proprietary operating systems and most of the software would have had to be completely redeveloped. Instead, the company opted for a much cheaper solution, a product called Baby 36 from California Software of the US. This emulates the System 36 environment on PCs so the company's software did not have to be rewritten.

Osborne's move from the System 36 to PCs on a Novell network went smoothly. After a successful test, the company's plant-management software transferred from the 36 to a PC over a weekend. The main difference to users was that on Monday morning they were using PCs instead of dumb terminals. Gradually, the accounts, sub-contracting, buying, sales ledger and administration packages were also moved to PCs and the System 36 was sold.

The move to PCs has improved the company's management information, because it can now use Lotus 1-2-3 to manipulate data that used to be on the System 36.

The network has expanded and now links over 100 users at different UK sites. They use IBM and Compaq PCs supported by a mixture of IBM and Compaq file servers (powerful PCs which manage the network and store files). It already had most of the PCs so the main costs were for Baby 36 software (from £3,700 for up to five PCs), for extra storage and for linking the PCs together (less than £100,000).

Flexibility. Even when keeping minicomputers for some jobs, many companies are developing new applications on PC networks to increase flexibility or improve responsiveness to customers. Mr Theodore Klein, president of the Boston Systems Group, a US consultancy specialising in downsizing, says: "PCs are far more adaptable to business change. Large organisations, especially in the financial sector, need to be very agile."

City stockbroker Smith New Court decided to develop its new dealer information system on PCs supported by a Compaq file server, rather than on its existing Digital Equipment Vax computers, because it wanted a more flexible system.

"PC development tools (such as SQL Windows) are quicker and easier to use than minicomputer tools," says Mr Greg Dowling, agency systems manager at Smith New Court. This means that new applications and changes to existing ones can be written faster.

Each sales area at Smith New Court has access to a number of PCs running MS-Dos and Windows, Microsoft's graphical user interface. From their PCs, dealers can request information from a settlement database stored on a Compaq file server. The settlement data is transferred from the Vax to the server database (based on Gupta's SQL Base) overnight.

Dealers took to the new system quickly because they had already seen several prototypes, which had been modified to suit their requirements. Now they get more up-to-date information.

Developing the system took up two people's time for four months. Excluding manpower and PCs, the system cost £16,000 (including the file server and development tools). Mr Dowling says companies which are developing minicomputer-style applications on PC networks for the first time should not expect cost savings immediately. This is because they will have to invest in new software and may have to buy in PC skills. "The savings will hit you on the second and third application, which we've already planned," he says.

Smith New Court has opted for a client-server approach to networking. This is proving to be the most common architecture for downsized installations. The user's PC, the "client", does a lot of its own processing, but can also issue commands to a larger computer on the network, the "server".

The function of the server, which can be a powerful PC, a workstation, a mainframe or a minicomputer, is to store and process information that would be too cumbersome for the client PC to handle. Wherever processing takes place, information is presented to the user on a PC. And PCs can draw information from more than one server.

According to the research consultancy Ovum, client-server computing often appeals to companies which find that they have more processing power on the desktop than in the computer centre.

Specialised servers are starting to appear, *eg* for electronic mail. So are tools for splitting applications between "client" and "server" computers. Yet managing client-server environments and building applications is still difficult. For example, there are few products for backing up data on PC networks, which recognise (as minicomputer products do) that it is not practical to back up unchanged files every night.

Other difficulties in downsizing to PC networks include:

- Lack of control. A totally centralised IT structure will not be suitable, because some of the responsibility for IT and IT costs will inevitably shift to departments. But a controlling strategy will still be needed.
- Lack of experience. In a report: "Client-server computing – commercial strategies", Merrill Lynch cites "experience" as one of the client-server products it would like to buy. Mr Klein says: "The technology is available, but the service and support and appreciation of what it can do aren't really there. It's like having a jet fighter on the runway but no staff able to fly anything more nimble than a Jumbo."

Despite the difficulties, Mr Ross says that "by the end of next year, we'll see a lot more companies replacing minicomputers with networked PCs".

Joia Shillingford is editor of Electronic Office, an FT newsletter on the business aspects of technology.

PORTABLE COMPUTERS

Vendors see prices fall faster than costs

PORTABILITY – that much heralded revolution in personal computers – has finally hit the European market. But it is the consumers rather than the manufacturers who are enjoying the benefits.

Portables continue to represent the fastest-growing segment in the PC sector, with more than 12 per cent of the European market, according to Dataquest, the UK market research company. And they are expected to have more than 30 per cent by 1995 as consumers take advantage of these smaller, lighter machines.

Such figures should be heartening for portable vendors. But a combination of poor economic circumstances and excessive competition has meant that prices are falling far faster than costs. The portable revolution has resulted in more machines being sold, but not all the vendors have been making much money.

Until recently, the growth of portable product sales has been phenomenal. European sales of portable products have grown from about 250,000 in 1988 to nearly 725,000 in 1990.

But that growth rate is now slowing. From a high of 79 per cent in 1989, unit growth is expected to reach only 37 per cent next year, according to Dataquest, and will slow to only 17 per cent a year by 1995. The fastest-growing sector, Dataquest believes, will be for notebook machines which it defines as weighing 7lb – just over 3kg. It expects sales of these lightweight machines to reach 1.3m within two years.

If that 37 per cent rise in unit sales for the whole portable market were matched by revenue growth, vendors would not be particularly worried. But manufacturer margins are under threat.

The Gulf war, together with German reunification and a slowdown in the economies of the two other largest markets – France and the UK – has affected demand for portable products.

In addition, nearly every PC manufacturer has taken notice of the sector's growth, compared it with the poor position of desktop PC market, and then launched a portable product. A classic marketing battle is taking place as vendors start to talk about the portable market already starting to mature.

Toshiba, the European market leader, estimates that whereas there were about 35 portable suppliers in 1989, this year more than 150 companies exhibited at Comdex, the computer show. Compaq, the US manufacturer, says it gave up counting its competitors when they passed the 300 mark.

The established notebook vendors, such as Toshiba and Compaq, are being challenged from three directions. Existing PC manufacturers such as IBM and Commodore have launched credible products over the last year; Japanese companies with strong capabilities in screen technology have also introduced excellent high-specification machines; and finally, at the low end of the market, the established players are being squeezed by clone manufacturers from south-east Asia.

"The main problem is that the portable product is easy to replicate," explains Mr Bob Webb, managing director of Victor Technologies UK, the British subsidiary of US-based Tandy Corporation. "You can set up a plant anywhere in the world, buy the components and then screw them together. It's becoming increasingly difficult to differentiate products."

With most vendors agreeing there is chronic overcapacity in the market, it is not surprising that price rather than product has become the main method of the differentiation in an increasingly competitive market. "Some of the discounting is enormous," admits Mr Webb. "The cost of manufacturing the technology is falling, but the prices portable manufacturers can charge is falling faster." A laptop with a 60 megabyte hard disk and a 386sx chip can be found in the UK for under £2,000 at the moment, whereas a desktop with the same specification was still £3,000 last year.

A war of attrition is under way. The leading vendors are gradually losing market share to the new entrants. Dataquest estimates that Toshiba had 28.5 per cent of the European notebook market by value during the second quarter of this year, while Compaq had 27.6 per cent. Compaq's share by volume over the same period was down from 39 per cent last year to 19 per cent.

Although portable computer technology is widespread, most marketing directors nevertheless still talk about differentiating their products through the functionality of the machine. The next great leap forward – expected early next year – will be the widespread introduction of thin film transistor (TFT) active matrix colour screens. These should provide better differentiation than traditional visual display units. Sharp has produced a screen which, it claims, will reduce power consumption by as much as 70 per cent.

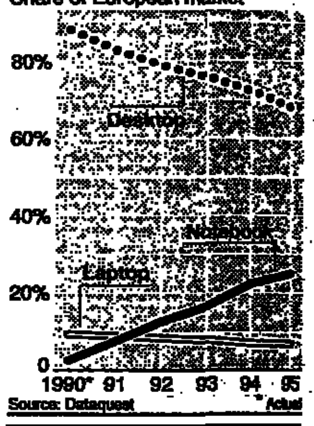
Other methods of differentiating the machines over the next year are likely to include security features – considered a must after the British Army's unfortunate habit of leaving behind portable machines containing United Nations battle plans in the back of cars. Grid, the company recently merged with Victor, is pushing security hard, given its considerable experience of the military market. Bondwell, the US-based manufacturer, has just launched a product with a 90 decibel alarm.

Meanwhile, other companies, such as Olivetti, are pushing the concept of docking stations into which laptops can be slotted. This allows them to be integrated in networks and larger display units, while still being detached to be taken home. Pen-based data-entry systems are also expected to have some impact on the sector, particularly in vertical niche markets such as stock control. However, pen systems capable of interpreting handwriting are some way from being commercially available.

The benefits of technological advances are becoming increasingly negligible for vendors trying to achieve competitive advantage. Not only is it difficult to keep abreast of all developments, but they can be copied immensely quickly.

PC market forecast

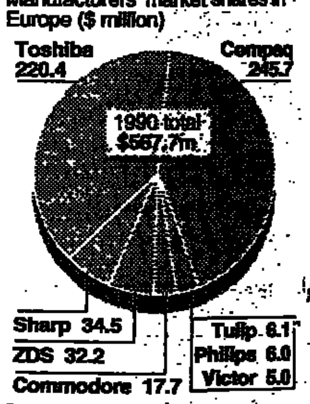
Share of European market



Source: Dataquest *Actual

Notebook PCs

Manufacturers' market shares in Europe ($ million)



Source: Dataquest

Product life-cycles are accelerating at an alarming rate. Toshiba, which used to pride itself in being in the forefront of portable product development, admits that it can no longer be first at everything.

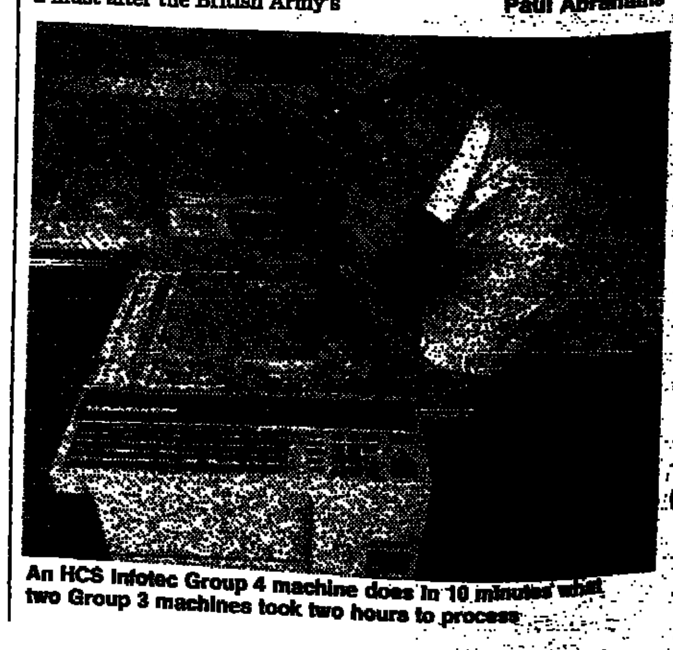
Some companies are looking to sell added-value solutions, by ensuring their dealers can provide the sort of service required by large account customers. Victor, for example, has cut the number of its British PC dealers from 517 to about 100. The group wants only dealers with adequate technical support, maintenance facilities and software support. Others are planning to sell their simpler products through the UK multiple chains, such as Dixons and Wildings.

Mr Gian-Carlo Bisone, vice-president of marketing for Compaq Europe, expects "superstores", such as those already developed in the US, to emerge. These specialist computer shops offer easy-to-configure products off the shelf, with limited support, in a similar way to department stores.

In the meantime, distributors much expect shrinking margins. Toshiba, for example, is negotiating with its distributors to cut the dealer discount rate from 43 to 30 per cent.

The shake-out will affect vendors and distributors alike. But the main beneficiary is the consumer. The latest machines are lighter, faster and more legible than their predecessors – they are also cheaper.

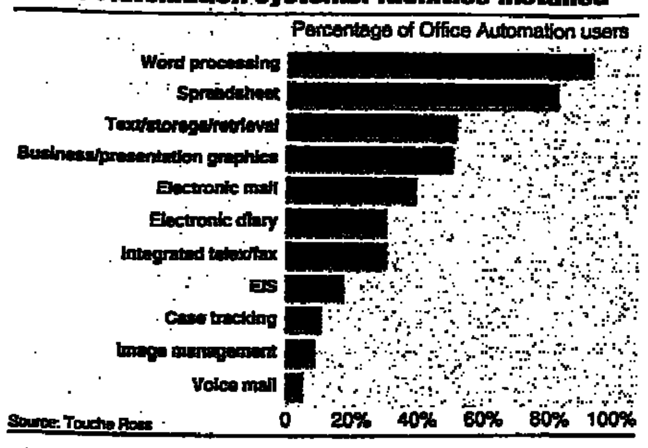
Paul Abrahams



An HCS Infotec Group 4 machine does in 10 minutes what two Group 3 machines took two hours to process

OFFICE TECHNOLOGY 3: *Office Computer Systems*

Office Automation systems: facilities installed



Source: Touche Ross

Della Bradshaw investigates problems of computer security

Viruses, fraud and plain commonsense

HACKERS, computer viruses and computer fraud have become common parlance in the media and in many boardrooms. For as personal computers have spread through offices, replacing locked filing cabinets or central computer rooms, the security of the information held on the computer system has become increasingly difficult to ensure.

Many companies assume that the biggest difficulty is in guaranteeing that unauthorised staff or outsiders do not read confidential data – or change or destroy it. But according to Mr Alan Soloman, chief executive of computer security firm SS International, of Berkhamsted, Herts, many companies are paying too much attention to the exotic and the scandalous, and too little to basic security commonsense.

He says the biggest security problem of all is a lack of back-up systems in case the computer hardware fails. He likens the PC's hard disc to any piece of mechanical machinery – in the end it will inevitably stop working. The problem is that many companies realise that they have forgotten to back up their discs – and therefore have no duplicate source of data – only when it is too late.

Even those companies which do copy data often store their discs locally. So if the machines are stolen, the thief is likely to take the back-up discs as well. A fire sweeping through the office would have a similarly disastrous effect.

If all a company's paperwork is destroyed, it may be unable to find out who it has paid or to whom it owes money, what stock it holds or what it has ordered or even who its customers or suppliers are, says Mr Soloman.

Although he plays down the idea of computer fraud and hackers, he acknowledges that viruses – computer codes which replicate themselves from one computer to another and then alter or destroy software – are proving a growing problem.

The first viruses did not appear until about 1987, but already about 250 of them have been documented. Mr Peter Lammer, managing director of Sophos, a company in Abingdon, Berks, which specialises in eradicating viruses, says that while two years ago viruses were largely a question of talk, now they have become a real business problem. Most large companies in the UK will have had at least one virus attack in the past year.

Although viruses with names as bizarre as Creeper and Reaper, Flu Shot 4 and Friday the 13th may raise a smile, they can be difficult and expensive to eradicate. Many of the early computer viruses – and these are the ones that are still most prevalent today – are largely just annoying. But companies with large numbers of discs may find that they have to search through thousands to find the rogue one and it may take days to eliminate the ball bouncing across the screen or prevent the text falling into a pile at the end of the screen.

Mr Lammer cites the case of a computer centre with 400 PCs. It had to close for four days to clear out a virus. Although the virus itself did not destroy data, the 1,600 man days of time lost in eradicating it had a serious commercial effect.

The problem for companies wanting to protect their software by carrying out "safe computing" – a term coined after the Aids computer virus struck about 18 months ago – is that the attacks are rarely perpetrated maliciously. Some of the earliest carriers of viruses were computer maintenance staff. They travelled from site to site inserting the same maintenance discs into machines belonging to different companies. If they picked up a virus in one company, it was transferred to every other company they visited.

Today many viruses are introduced by employees bringing in a disc from their home computer – a game, for example, or some office work they have finished off in their spare time.

Mr Chris Hook, senior consultant at the UK's National Computing Centre, says much of the virus problem can be prevented by buying software only from reputable suppliers and ensuring that any disc that comes into the building is checked for viruses before use. The PC that carries out the checking must not be part of the office network.

Virus checking software is widely available which searches for the individual pattern that every virus leaves in the program. For companies with networked PCs, the checking can be centrally orchestrated on a random or a regular basis.

Preventing computer fraud may be less easy. The widespread use of computer systems in financial applications – payroll, funds transfer or bill payment – has offered both disgruntled employees and organised crime alike a lucrative opportunity. Once the fraud has been spotted, it can often be too late to retrieve the loot.

There are two main types of fraudulent attacks: single

Most large companies in the UK have had at least one virus attack in the past year

large-scale frauds, where millions of pounds are removed in one swoop or what Mr Donn Parker, senior management consultant at SRI International, in California, calls "salami attacks". In these, small amounts of money are sliced away over a period of time.

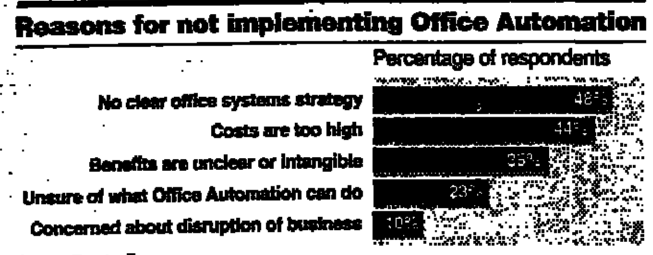
In successful "salami" crimes employees usually exploit the controls that have been built into the computer systems specifically to prevent fraud. Mr Parker cites one example which involved a member of the payroll staff entering overtime payments for several company employees. The names – which were used for checking payments – were entered correctly. But the pay roll clerk substituted her own employee number for those of the people claiming overtime. As a result, the money was paid to her bank account.

Mr Parker says research at SRI, which has been recording and analysing computer crimes for the past 20 years, shows that "salami attacks" are more prevalent than large-scale frauds.

Basic preventative methods include having a reliable access control method to prevent would-be fraudsters from outside the company tapping into the computer system. Today these largely rely on passwords, but "biometric" devices – which involve checking fingerprints, signatures or voice prints – are becoming increasingly popular.

One of the latest companies to enter the market here is Olivetti Systems Networks. It has developed a smart card, a credit card-sized plastic card incorporating a chip, which can store voice impressions. This can verify the identity of the person trying to use the computer.

Reasons for not implementing Office Automation



Source: Touche Ross

DOCUMENT IMAGE PROCESSING

Refining the paperless myth

DAVID JONES has a confession to make. Despite spearheading Rank Xerox's thrust towards the electronic office, he still prefers to print out onto paper any long documents that he needs to read.

The myth of the paperless office has, it seems, finally been put to rest. Few people today believe that computers will be able to replace the need for paper at work. Companies supplying electronic office equipment have had to change gear.

"Eight to 10 years ago I was as guilty as anyone of preaching the paperless office," says Mr Jones, business strategy manager for Rank Xerox. "We believed that if technology could do something, people would follow. But people are very comfortable with paper. They understand information, *retain it, and pick up spelling* mistakes more easily when it is printed."

Manufacturers of image processing equipment – which "reads" and stores words and diagrams on computer – are among those who have to adjust to a slower pace of growth. According to Rank Xerox, about 95 per cent of material used in the office is still stored on paper rather than electronically.

Mr Jones distinguishes three types of image processing. In simple image scanning, useful in applications such as publishing, documents are scanned electronically so their pattern can be manipulated on a screen and then printed.

In automatic identification or character recognition, the computer actually "reads" text and diagrams, so they can be manipulated by word processing packages, for example. The technology has improved markedly, so that companies are now claiming 98 per cent accuracy.

He also highlights a third category, which Xerox calls "image lift". Banks, including one in Norway, are considering scanning cheques electronically and then sending their customers miniaturised reproductions of them, which can be reconciled against their cheque *book stubs*.

The main consumer of image processing equipment appears to be in financial services, particularly banks and insurance companies, which are, in Mr Jones' words, "transaction-driven": they rely on daily processing of large amounts of information in a regular format.

For the same reason, there is interest, although less funding, from the public sector. Several equipment suppliers are currently bidding for a system for Companies' House, which receives more than 40,000 pages of paper every day, and typically takes more than an hour to retrieve existing records stored on microfilm.

Rediffusion Simulation of Crawley, Sussex, has ordered a £90,000 document image management computer system from Cimage International of Bracknell, Berks

Mr Martin Spencer, image marketing manager at ICL, says there are three main applications for image processing: archival work, which uses image processing as an electronic filing cabinet; workflow applications, where scanning is one part of a work process; and operational tasks, where it is a constant part of the daily work of a department and requires fundamental change in how work is organised.

Gushing projections over the past few years have always enthused that image processing is just on the verge of tremendous take-off. Mr Jones is more sceptical. "I think there will be a much more gradual acceleration towards acceptance," he says.

One factor holding customers back in the past has been fear of the new, unfamiliar technology. There are also legal complications. If a document is ever likely to be required in court, it cannot be destroyed even though it has been stored electronically. There is too much risk of it being tampered with for the court to rely on a copy.

Traditionally, image processing has been sold on the grounds of economic savings. Paper consumes a vast amount of costly space, and requires a great deal of staff time for retrieval.

However, Mr Jones suggests that the stronger argument today is in helping to boost competitive advantage. As obsession with the idea of customer responsiveness grows, image processing facilities offer companies one way to speed up response to inquiries, and provide a more efficient service to the public.

In a public utility, for instance, bills and payments can be processed electronically as soon as they are received. They can then be rapidly called up when a customer telephones or comes to an office for account information.

Mr Malcolm Dowsett, information technology services manager at Essex Water, oversaw the installation of a prototype ICL image processing system in its purchasing department earlier this year. It now stores all invoices, contract details and other routine documents relating to any order placed. Each A4 sheet takes less than two seconds to scan. In a typical day, the office scans 100 sheets each day.

The company was motivated by a desire to speed up retrieval times as much as to save costs. He says if the trial runs effectively, Essex Water may consider installing image processing in many other departments, including customer accounts and payroll.

Despite the slow rate of growth in demand for image processing, Mr Jones believes the industry has come a long way. "In the last two years there have been tremendous developments in storage, processing and power," he says. Optical discs have been among the great boosts to the technology required for effective systems.

He is convinced that microfilm will be replaced by electronic storage by the end of the century as the main medium for storing documents, as compact disks make microfilm complex and costly to store by comparison. He also suggests that colour imaging will gradually replace reliance on black and white.

ICL's Mr Spencer adds that new image processing devices will soon begin to integrate sound and video images alongside conventional photographic ones. "I am certain that within four or five years, image processing will just become another part of the office environment, like the word processor a few years ago," he says.

Nevertheless, as Mr Jones says: "We're waiting for users to accept the technology that is already available. The onus is on suppliers to deliver existing technology in a non-threatening fashion."

Andrew Jack

ELECTRONIC TYPEWRITERS

Take a letter, Miss Jones in a word processing era

WINDOWS operating systems and graphical user interfaces may, eventually, make all word processing software easier to use. But no PC, WP package or printer combination yet devised offers the immediacy, ease of use, finite accuracy and cost/performance offered by an electronic typewriter (ET).

The advent of low-cost, high quality laser and ink-jet printers makes them affordable for every PC user, but a non-impact printer cannot make carbon copies nor print onto multi-page form sets; is not very good at accepting envelopes or the occasional label; and is more trouble than it is worth for one-off memos and filling in forms. A typewriter is the tool for those jobs every time.

You cannot beat an ET, either, for instant printing of foreign language characters and accents. Indeed, getting a printer to produce a £ sterling sign is not much easier today than it was five years ago. So it is easy to understand why ET sales continue at around 430,000 units a year.

However, the days of the large office machine appear to be all but over as smaller, sophisticated yet cheaper machines come on the market to satisfy both the PC user, who needs an occasional typing facility, and the small office/home office user, who does not need a PC but does need a text processor. Portables and compacts now command over 67 per cent of the ET market.

State-of-the-art features, even on sub-£250 machines such as the new Canon ES23, include line display, correction memory, spelling checker and user dictionary.

Increasingly, they can make use of standard 3.5in discs, as can the new Panasonic compact range, to which a 9in monitor for easier text editing may be added.

Some, for example the Triumph Adler BSS 300 typewriter-based text processor, can run readily available PC software, access databases on corporate mainframes, can be added to PC networks and can communicate or send fax messages via telephone lines using standard modems or fax cards.

Not all business equipment manufacturers believe there is a strong future in typewriters on a global basis. Earlier this year, for example, IBM sold out to Clayton & Dubilier. Lexmark International was then formed to take over design and production of the IBM branded typewriters, printers, keyboards and related supplies, with IBM retaining a 10 per cent interest and continuing with product marketing and distribution.

Xerox has just announced that it is to pull out of manufacturing and marketing typewriters in the US. But recently Rank Xerox launched the new German-made 6012 compact ET, confirming its intention to stay in the European market for the foreseeable future.

There is even a new name on the ET block. Having come from nowhere to become one of the top three in the fax market in little over a year, Samsung is launching the first models in a family of compact ETs and is also about to set the industry alight with a sub-£500 eight pages a minute laser printer.

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Just as there is still a market for typewriter-based systems, so there is still a market for dedicated WPs, but again with portable machines realising the greatest growth. The trend was confirmed by Canon following better-than-average sales of the StarWriter 80 and by Brother whose sales of the WP5 and WP6 were higher than expected after their launch at the start of the year.

Intending to maintain its 31 per cent share of the portable market, Sharp beat the competition by launching the first portable WP to incorporate an MS-DOS compatible disk drive. There are plans to introduce later this year a portable WP which uses the same IC (integrated circuit) memory cards for document storage as the IQ organisers and, in 1992, a battery-operated portable WP.

Amstrad has underlined its commitment to the dedicated WP market by just launching two new PCWs, both of which use industry-standard 3.5in discs. For those who want a low noise printer, the PCW 9256 Plus offers the option of a bubblejet printer. It is a pity that the company did not incorporate MS DOS file format compatibility.

However, with LocoLink, a cable and software package from LocoMotive Software, it is possible to transfer files from a PCW to a PC running LocoScript PC word processing software relatively quickly.

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The continued demand for typewriters and dedicated WPs in no way diminishes the demand for word processing software for running on desktop PCs. But the packages on offer today are much more than word processors. Not only do they offer sophisticated editing with spelling checkers and thesaurus, they will even check your grammar, enable you to produce presentation quality documents to desktop publishing standards, including graphics and photographs.

However, the more sophisticated the features, the greater demand for graphical user interfaces and Windows to make access to features easier and quicker and to shorten the ever-lengthening learning curve. Indeed, easier to use software is a stress-reduction requirement under the EC Directive on minimum health and safety standards.

WordPerfect for Windows is one step nearer to release date, beta testing having begun throughout the world at the end of July. All being well, deliveries should begin before the end of the year.

WordStar, though, hopes to claw back some of its lost market share with the launch of Legacy, a Windows-based software package which combines word processing with extensive page layout and desktop publishing facilities.

Another challenge to WordPerfect comes from UpWord for Windows, the first mainstream off-the-shelf product from Wang. It has the ability to import text, graphics, images, databases and numerical data from most popular PC packages.

Julie Harnett

Peter Purton foresees a merging of technological legacies

The computer-fax link

IF THE 1980s left two technological legacies in the office, they must be the personal computer and the facsimile terminal. The 1990s could see their integration.

In the UK alone there are now almost 1m fax terminals in use. Hardly a business in the country is without one (about 65 per cent of employees are estimated to have access to a fax terminal, compared with just 13 per cent in 1986) and there are even signs of a domestic market for fax terminals developing (by 1993 business information specialist BIS Strategic Decisions estimates that around one in three facsimile machines will be bought for personal use).

The fax has revolutionised the way we work. Unlike telex, which was always reserved for special communications, fax has penetrated all levels of text communications, from invoicing to memo writing.

The reason has at least in part been due to facsimile's simplicity. Unlike computers, all fax terminals work more or less in the same way. Once a user has sent a fax on one, the chances are that he or she will be able quickly to learn to use any other manufacturer's model.

But despite their simplicity of use, the British Facsimile Industry Consultative Committee, an industry group, detects a move towards more sophisticated facsimile equipment.

On their way out, for example, are the rolls of shiny and expensive paper that currently populate most facsimile terminals. In their place consumers are demanding ordinary cut sheets – just as they use in their typewriters, computer printers or photocopiers.

Storage of outgoing and incoming messages is also becoming standard. This means, on the one hand, that faxes can be read into the facsimile terminal during the working day, for transmission overnight, when tariffs are lower. On the other hand, a permanent record of incoming faxes means that if a message gets lost on its way from the terminal to the intended recipient, a new copy can be produced at any time.

Other features which are now regarded as standard include number storage, abbreviated dialling, full reporting on activities and faults and use of the facsimile terminal as a photocopier. Many new machines also feature a socket where a cable to a computer can be plugged in.

The idea of linking the facsimile to the computer is gaining currency. In the late 1980s the first boards appeared which could be slotted into the back of personal computers to allow them to send messages via phone lines to facsimile terminals. Such devices make sense in offices where personal computers are networked, allowing many users who would otherwise not have access to a terminal to send a fax.

The main drawback of such systems, however, is that they are useful only for sending messages, not receiving them. Many commentators believe that this problem may be overcome with the widespread introduction of digital facsimile terminals. The first digital facsimile terminals are already available. But the success of these Group 4 machines has been limited. The reason for their disappointing performance is largely explained by the absence of public digital telecommunications networks on which they can be used.

Group 4 machines were initially designed for use with the integrated services digital network (ISDN). This technology, while almost universally supported by the world's telecommunications network operators, has taken a lot longer to materialise than had been hoped.

However, there are signs that many ISDN operators see Group 4 fax as the logical first application of ISDN. Yet, just as prospects are beginning to look up, the Group 4 fax standard is now finding itself under threat. And to add to the irony, the threat is coming from the technology it was designed to replace, the current Group 3 fax standard.

"While the world waited for ISDN, the customer definition of what is desirable in Group 4 has become available on Group 3," notes Ms Meredith Fischer, vice-president of marketing, facsimile division, at Pitney Bowes, the US office machinery manufacturer.

A variant on today's Group 3 technology – a UK development called Group 3 bis – can support the same faster transmission speeds that Group 4 was designed for, as well as the higher resolution and message storage facilities. And, perhaps most significantly of all, its computer compatibility.

Its development is being backed by European and US companies, such as Pitney Bowes. But the Japanese, who have already invested a lot of development money in Group 4 technology, are proving less enthusiastic. "Fax is dominated by the Japanese and the Japanese are pushing Group 4," notes Ms Fischer. "We are facing a stand-off," she adds.

Whether Group 3 bis or Group 4 wins the battle to be the next standard for the facsimile terminal, the path has been set towards the integration of the facsimile with the computer.

Already it is clear that ISDN will itself be superseded or at least supplemented by broadband digital telecommunications networks in the course of the next decade. This is likely to lead to an explosion in computer-to-computer communications as much larger volumes of data will be able to be transferred over greater distances in shorter periods of time.

There is a serious question whether facsimile in the broadband era will look anything like we are used to. Pitney Bowes' Ms Fischer believes we may see facsimile merged with computing for all but a few specialised applications. "The technology exists but there are a lot of nits which have to be sorted out," she notes.

PHOTOCOPIERS

Potential of colour

LAST MONTH Rank Xerox ended speculation about its re-entry into the colour market when it announced the planned arrival of the Xerox 5775 digital colour copier 16 years after its first attempt. But success is more assured this time, since competitors such as Fuji, HCS, Ilford Cibacopy, Kodak, Minolta, Panasonic, Ricoh and Toshiba are already in the market, creating awareness of the various colour technologies on offer.

The advantages claimed by Canon, Konica, Toshiba and now Xerox for digital technology, however, include copies that are sharper and can be enhanced to a much greater extent; use of electronics enabling images to be manipulated any which way; systems that can be upgraded at any time, with the possibility of being linked to PCs to provide a printing or scanning facility; internal memories that can potentially be used to store pages either for fax broadcasting, private mailbox use or electronic collation; and the ability to be installed on a local area network to provide a central multi-function resource.

In terms of colour imaging and editing, a digital unit can produce virtually any colour or shade, including registered or customised colours; can turn black and white into single or multi-coloured documents; and can work with colour originals to change colours. It can cut and paste a colour image and merge it with another document; enlarge or reduce colour originals up to A3 size; and produce colour separations.

The unprepossessing brand name for the new Xerox machine (during the development stage it bore the more user-friendly name of Sunray) belies the fact that it represents true state of the art. Some four years in the making, it promises a copy rate of 10 per minute in colour, three times that in black and white; and the ability to produce immediately usable colour copies on overhead projection film by virtue of a newly developed ink that ensures the image does not smudge.

But what really sets the Xerox 5775 apart from the rest is the full-colour, touch screen video control monitor which makes use of icons for easy access to all the facilities, however sophisticated.

The growth in colour copying could be big business. For instance, Dataquest claims that colour livens up a memo so that it increases readership by 32 per cent and message retention by 26 per cent.

Market consultant BIS Strategic Decisions believes that a major spur to growth will be increased use of colour PC monitors and colour printers. Already colour monitors account for two-thirds of the European market, with over 1.7m units in 1989, and a projection of 4m in 1993.

Until the sub-£10,000 colour copier arrived, the cost of colour technology made it prohibitive for implant use. Now, it can even be considered a departmental purchase.

According to Canon, the market leader in colour technologies, the only sector of the photocopier market with growth potential is full colour copying. Everything else, it says, is a replacement market. Hence the decision to launch yet another colour copier, the CLC300, which bridges the gap between the CLC 200 and the CLC 500 and can be linked to an Apple Mac or PC, with a PostScript interface available.

Sharp argues that the colour copier market has yet to take off; hence the decision not to launch a competitor to the sub-£5,000 Brother 5500. Sharp has, however, entered the high volume mono market "because that is already strong and expanding". That view is supported by Dataquest whose figures show that, between 1987 and 1990, this sector of the market, *ie* copiers offering speeds of between 70 and 90 copies a minute, trebled in unit terms and will continue to grow over the next five years.

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Most manufacturers believe that the trend towards systems copiers will increase as the demand for higher productivity and improved job turnaround times gathers momentum.

One of the advantages of the modern systems copier is that there is no need for a dedicated operator. That was one reason why solicitors Hammond Suddards decided to install a 100 copies per minute Oce 2500 in each of its locations.

Clerks, partners, administrators and secretaries can all use the machines to produce multi-page document sets, complete with covers, on demand. Because the firm has a preference for spiral binding, special attributes that proved attractive included one-pass duplexing and the ability to handle pre-punched sheets. The added bonus of the longest guarantee in the business, *ie* 10-years/10m copies, clinched the deal.

When it comes to large copier installations, most organisations prefer to deal with manufacturers direct. That is likely to continue in the wake of the furore over dubious leasing contracts offered by some dealers.

But proving that not all dealers should be tarred with the same cowboy image, the Automobile Association recently signed a £1.5m contract for Erskine to install 450 Canon photocopiers.

Factors that appealed to the AA included a nationwide service operation backed by the BS 5750 quality assurance accreditation and a computerised work control system which monitors the performance of each individual machine, with full management reporting designed to keep downtime to a minimum.

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In an environmentally conscious age, one area of the copier operation that is often overlooked is wastage of paper through spoilt copies and inadvertent over-runs on quantities. Emos Information Systems finds that the desire to save trees is influencing more customers to introduce control systems that encourage users to be more careful when using photocopiers.

Since Portsmouth College installed an Emos charge card system, the bins beside the copiers are emptied once a week where they used to need emptying twice a day.

But waste there will be for anyone who attempts to use a colour copier for forging the new pink and green driving licences. The use of special paper means that any copies made will have the word FAKE across them in three places.

Julie Harnett

EUROPE'S INSTALLED COLOUR COPIERS (thousands)

Year	1989	1990	1991	1992	1993	1994
Total	11.90	19.37	28.94	42.74	62.08	84.44
Rest of Europe	5.10	7.55	10.79	15.61	22.53	29.87
France	2.44	3.92	5.83	8.45	11.90	16.04
Germany	2.31	4.10	6.31	9.77	14.64	20.40
UK	2.08	3.80	6.01	8.92	13.01	18.13

Source: BIS Strategic Decisions

COLOUR PRINTING

It may be a hit with the banks

A BRIGHT new generation of colour printers is breaking cover in a gloomy market, with the aim of conquering the office world. According to research by BIS Strategic Decisions, the installed base of colour printers in Europe will jump from 160,000 in 1990 to 625,000 by 1995.

This breakthrough has long been predicted. Yet, though the computer with a colour monitor on the desk is now commonplace, colour printers have so far failed to become essential office equipment.

The reasons are simple enough. Printer manufacturers always assumed that once colour was available everyone would use it: after all, we live in a multi-colour world and in every other aspect of our lives colour is the norm.

The problem is that all colour printing technologies have had specific drawbacks in office use. Thus, though top-notch colour lasers gave reproduction quality almost to offset litho standard, they cost from £25,000 upwards. At the other extreme, dot-matrix printers, fitted with optional colour ribbons, were cheap but nasty. Alternative technologies, such as thermal and ink-jet printers suffered from high running costs or the ability only to print on coated paper.

Besides, while colour printers are ideal in graphics, engineering and architecture, in the office their use is restricted to niche applications, such as overhead transparencies and making hand-outs for presentations. The bread-and-butter work of office printers remains churning out pages of text.

True, this text may be highlighted with colour and combined with illustrations in desktop publishing. But until now colour printers have not been outstanding at either, generally lacking software support. The best non-laser machines were also conceived as purely graphic tools, and their text resolution has not been good enough. To produce an acceptable colour page, users needed one printer for text and another for graphics, and still had the problem of merging the output of the two.

But, apparently, all is set to change. The new generation of printers avoids the shortcomings of its predecessors. Above all, their text printing quality is as good as their graphic ability.

They bypass the need for specific software support as they come supplied with drivers for Windows – programs supplying friendly interface with other programs. Most graphics and desktop publishing software packages are now written for Windows environments so that users can cut and paste at will between different programs.

The first benchmark examples of such multipurpose printers are the bubblejets recently launched by Canon and Mannesman Tally at under £2,000. They differ in their resolution, features and scope, but both produce high quality four-colour graphics using magenta, cyan, yellow and black inks, as well as high resolution black and white.

Bubblejet technology, until now confined to relatively low quality machines, is tipped as the printer technology of the future because it has no intrinsic drawbacks. It uses colour inks contained in a printing head composed of fine nozzles, each one containing a tiny heater. When this is activated, a tiny "bubble" droplet of ink is ejected onto the paper.

Thousands of bubbles can be ejected per second, so that bubblejet printers can be very fast and have an immense palette of selectable colours.

However, bubblejets do not have the multipurpose colour printing market to themselves. Thermal printers with their need for non-plain paper, and dot matrix with their poor resolution are not serious contenders. But lasers may still be a different matter, though (as they have to be combined with a xerographic copying unit) they remain bulky and mechanically complex.

An example of a new breed of colour laser printer targeted at the office market is the machine sold by the Dutch company HCS. This combines a Sharp laser engine with technology developed by Colorocs, the US and Postscript software, to print at 40 pages a minute in black and white and five a minute in colour.

The trend for colour on a par with black-and-white is also fostering a renewed interest in highlight colour (two-colour printing as opposed to full-colour). Technologically, the most innovative two-colour printer is the new Xerox 4850, a vast laser machine priced at $140,000, designed to work with IBM mainframes and the AS400 range but also Postscript compatible.

While in most high-speed printers the paper has to pass through the machine three times, one for each colour, the 4850 will print black and a choice of red, green or blue in a single pass, maintaining its printing speed of 50 pages a minute. Its main application is expected to be in making forms and instruction manuals more readable by highlighting the important bits. But it is also tipped to be a hit with banks which could use it to send out statements with overdraft figures highlighted in red, as in the good old days. So here we are, back to the future.

Laura Blair

OFFICE TECHNOLOGY 6: *Office Telecommunications*

IF THE 1980s were the decade of office automation, then the 1990s promise to be the decade of communications in the office. And the trend is towards cordlessness communications.

With the application of the computer to businesses, a range of laborious tasks has simply been automated away. By adding communications, businesses will find they are able to optimise the use of their resources, both computing and human, introducing a new era of business efficiency and flexibility.

The ultimate expression of this new-found flexibility lies in cordless communications. The first example in most offices is likely to be a cordless phone. Though popular for home use, this technology has so far seen little application at work.

One reason why cordless phones have made so little impact in the office is that traditional technologies have not allowed the kind of densities of use typically encountered in a working environment. Another reason may be that most of today's cordless phones are incompatible with most office phone systems.

These two problems are set to be solved, however, with the introduction of digital cordless phone technologies. Currently, two systems are planned for introduction in the UK. CT-2 and Dect. CT-2, which stands for second generation cordless phone, was developed with office usage in mind. It copes with office user densities, but also allows the advanced features of today's office phone systems to be exploited.

PRIVATE TELEPHONE EXCHANGES

The cordless chord

THE ATTRACTIONS of a cordless office should be obvious. No longer will telephones, personal computers and facsimile machines be glued to a single desk. No longer will telephone lines be connected to sockets on the wall.

With the cellular telephone, businessmen and women have experienced the freedom of mobile communications everywhere except in the office. Long overdue as an idea, is the cordless office about to become a necessary business tool?

Putting radio telephony into the confined space of the office has presented problems of quality, capacity and product standardisation which have been overcome only with the development of digital radio techniques.

The analogue radio technology which is the basis of all existing cellular telephone networks was also used in the 1980s for cordless telephones, with little success. The poor reception tolerated in a car on the M25 was unacceptable in the sanctuary of the office.

However, manufacturers of private telephone exchanges (PBXs), which lie at the heart of all office communications networks, are finally taking cordless systems seriously.

The development of digital cordless telephone technology is expected to make the cordless office a reality by the middle of the decade.

Market research organisation BIS Strategic Decisions predicts that by 1996 there will be over 5m cordless extensions in European companies. With Europe likely to have more than 500m private exchange lines in 1996, the size of the cordless market may still disappoint manufacturers.

"Customers are already showing a very strong interest in cordlessness and I expect a universal take-up in the office and factory," says Mr Nick Doughty, manager of cordless systems at the UK's largest PBX supplier, GPT.

Residential cordless market in Europe: forecast

	1990	1991	1992	1993	1994	1995	1996
Installed base (000)	2,316	2,950	3,827	4,946	6,319	8,017	10266
Penetration (%)	0.57	0.72	0.94	1.21	1.55	1.97	2.52
Shipment volume (000)	620	727	936	1,157	1,392	1,781	2,423
Shipment value (US $m)	222	277	282	486	558	651	781

Source: BIS Personal Communications Report 1991

The most immediate market is likely to be in smaller companies which have fewer than a dozen telephone extensions. A small office will be served by a single radio cell, perhaps added to existing PBXs or key systems. Mr Doughty expects as much as 70 per cent of the 12 line or under market to be cordless by the middle of the decade.

In larger companies the conversion to cordlessness will not be so simple and attractive unless clear strategic advantages can be identified. These organisations will be looking for more than simple mobility in the office. The cordless systems will become strategic business tools, offering companies a competitive edge in the efficiency of its communications. They will enable them to reduce the cost of their telephone networks by cutting investment in building wiring.

One supplier has indicated that a cordless extension could cost 30 per cent more to install than the hard-wired equivalent. That could be as much as £200 more for each extension.

With hundreds of extensions in a single building, the larger cordless systems will need several "cells" to operate. And if there is to be total freedom of movement, the system must be able to handle roaming between cells without interrupting calls, in the way cellular telephone systems operate.

Ultimately, it will be important for the larger cordless systems to be compatible with the emerging technical standards being proposed for future personal communications networks outside the office.

Over the next two to three years the market will be restricted to basic, lower cost systems using already available technology. The most common system is likely to be the digital cordless telephone with a common air interface (CT2/CAI) which uses internationally agreed radio frequencies around 860 MHz. Originally developed in the UK, CT2/CAI has become a *de facto* international handset standard.

Both Northern Telecom and GPT plan to introduce cordless extensions on their smaller PBXs next year. Ericsson, the Swedish PBX supplier, has developed its own non-standard cordless system.

Roaming between cells will not be possible with CT2/CAI and suppliers expect isolated cordless cells to be used alongside existing wired extension lines. "Customers must ask themselves whether everyone needs a cordless extension," says Mr Geoff Gudgion, director of market support at Northern Telecom Europe. He believes a completely cordless office is possible but in the early days not likely.

The wider introduction of cordless extensions may be postponed until the arrival of systems based on the more sophisticated European cordless telephone (Dect) standard.

By the end of the decade businessmen and women will be able to use a single pocket telephone both in and outside the office.

All manufacturers accept that Dect will be the basis of most of Europe's cordless offices in the late 1990s. Some PBX suppliers may delay the introduction of cordless systems until Dect equipment is available in 1993.

The first cordless PBX systems, to be launched next year, will give only a hint of what is to come. Most of Europe's companies may have to wait until the middle of the decade to experience the full impact of cordless office communications.

Richard Wilson

Cordless PBX market in Europe: forecast

	1991	1992	1993	1994	1995	1996
Installed base (000)	14	191	513	1,547	3,157	5,238
Penetration (%)	0	0.05	0.13	0.38	0.77	1.29
Shipment volume (000)	14	177	324	1,049	1,668	2,218
Shipment value (US$m)	7	83	145	483	646	752

Source: Personal Communications Report 1991

MOBILE TELEPHONES

Beyond the four walls

Systems based on Dect, the Digital European Cordless Telephone, will feature higher densities (up to 5,000 handsets per square kilometre), with the added advantage of being compatible with the integrated services digital network or ISDN services, the standard on which the latest fixed telecommunications networks – both public and private – are being based. That compatibility opens up the way for what may be the next phase of cordlessness at work – cordless computer networking.

Already many offices have networked their computers, sharing expensive resources such as printers and databases, and improving productivity by letting individual users work in a team.

A problem that has already been encountered with these so-called local area networks (Lans) is that they tie individuals to specific locations. The average cost of moving a network node is estimated at £300 per terminal moved, which includes adequately documenting the operation and physically moving the equipment as well as recabling.

"In a very old building the cost will be as high as £500," notes Mr David Taylor, industry analyst at market research house Dataquest.

Cordless local area networks (Clans), the first of which are just reaching the market, provide a solution. These range from technologies based on the Dect cordless phone standard to a very high performance cordless rival to the best of today's wired systems from US company Motorola.

For many, however, cordlessness is seen as a way of extending the office beyond its physical boundaries. Already over 1.3m people use mobile phones to keep in touch while out and about. And as well as mobile phone users, there are also hundreds of thousands of mobile radio, mobile data and radiopaging users.

For most of these people, however, the office communications systems and their mobile communications are seen as separate entities. For a lucky few, however, the link between the carphone and the office phone has already been made.

Both UK cellular radio mobile phone network operators, Cellnet and Vodafone, offer services which directly link mobile phones registered to their networks to company switchboards.

"In effect, direct access of this type means that company personnel can operate their mobile phones as switchboard extensions," says Mr Stephen Brewer, Cellnet's director of marketing. Cellnet currently has 23,460 phones from 170 companies using its Direct Access service.

Such direct connection services can also save costs. According to Mr Gerry Cowan, Vodafone's product development manager, his company's Vodanet service can bring with it a discount on ordinary mobile telephone rates of up to 45 per cent.

The next step for many such users in integrating the mobile phone with the office may be the addition of data communications. To date, barely 1 per cent of cellular users use the service for data, but the industry predicts a greatly improved take-up in the 1990s.

Vodafone has been the pioneer in this area. The originator of the *de facto* cellular data communications equipment standard – the so-called cellular data link control protocol or CDLC – and claiming 90 per cent of this market, Vodafone also offers a direct data network gateway to its Vodanet users. Major users can even reserve a channel exclusively for data use.

Cellnet, too, regards data as an important area for future development. In a recent survey conducted by the company some 17 per cent of large companies said that they were already using some mobile data links. Another 36 per cent planned to use mobile data "in the next few years".

Many believe that the real potential for data over cellular will, however, be realised next year, with the introduction of digital cellular radio technology. The so-called Global System for Mobile Communications or GSM digital cellular standard is being supported by both Cellnet and Vodafone and also forms the basis for personal communications networks or PCNS, which should come into use during 1993.

As GSM is digital, its proponents say it will be better suited to handling computer data, facsimile and even video.

PCN may take the development yet another stage forward. From the outset the technology has been conceived as a means of connecting fixed as well as mobile subscribers to the global telecommunications network. With PCN, says Mr Peter Ramsdale, technical director of Unitel, the integration of the mobile phone and the office phone could be complete.

"I don't see why people should not be able to use the same phone at home, in the car and in the office," he says. And via that phone, a fax, a computer, a videotelephone..."

Peter Purton

Growth is being pegged, says **Richard Wilson**

Squeeze on pagers

RADIO PAGERS have been disturbing business lunches for nearly 20 years. But in the 1990s the pager, a pioneer of business communications outside the office, will have to fight for survival against ever-more sophisticated forms of mobile communications.

As a result, European paging users can expect more versatile services and lower prices as operators try to repeat the success of the world's strongest paging markets in the US and south-east Asia.

After years of growth, paging markets are being squeezed by the falling cost of cellular communications. In 1989 there were 4m radio pager users in Europe, nearly double the number of cellular telephone users. Market research organisation Frost & Sullivan estimates that by 1994 the cellular market will have caught up with the pager market at 7m users apiece.

Even in the US, where there are 9m pager users, market growth is being pegged back to around 10 per cent a year.

Paging markets are defined by a number of technologies and products and not all are treading water. The most vulnerable market is that for privately owned, on-site pagers, which operate only on the user's premises. In 1989 there were 2.2m on-site pagers in Europe, but it is predicted this will rise only to 2.8m by 1994.

It is the national paging systems run by public network operators which are taking the fight to the cellular telephone. BIS Strategic Decisions predicts that the number of wide area paging users in Europe, 1.9m in 1990, will grow by 18 per cent this year.

Paging has been held back by its high cost in Europe. The UK is Europe's largest market with 650,000 users, but this represents a penetration of only 1.2 per cent. In the US the penetration is nearer 4 per cent and almost 12 per cent in Hong Kong and Singapore.

BT, which runs Britain's largest paging network, believes the high cost of UK paging is partly responsible for market stagnation. "Prices must decline if paging is to find markets against competing technologies," says Mr Peter Rachor, BT's paging general manager.

The cost of the pager itself is already being forced down with suppliers Motorola, NEC, Philips and Panasonic facing annual price reductions of between 10 and 15 per cent in most international markets, according to BIS.

Mr Rachor says Europe's operators must learn from the US and Asian markets where operators have used sophisticated paging technology to offer services at half the cost of most European services.

The problem facing many operators is transferring users to these more sophisticated products. Most of the UK's paging users are still tied to a basic tone pager which just notifies them of a call.

The largest growth is in message paging services using more sophisticated alphanumeric pagers that can receive, store and display messages up to 84 characters in length.

Pager users can now access information services through their pager, such as the hourly financial bulletins which Mercury Paging offers in partnership with the Financial Times.

The UK market has the highest penetration of alphanumeric pagers in the world. Mr John Watts, managing director of Air Call, says over two-thirds of all new subscribers now opt for alphanumeric pagers. But it is an inherently labour-intensive and expensive service to provide because a 24-hour bureau service is required to handle users' calls.

The biggest-selling products in the US and Japan are numeric pagers, which display only the telephone number of the caller. The attraction of numeric paging is that the operators do not have to run costly messaging bureaux. Calls to the pager can be passed on, using software in the telephone exchange.

Numeric pagers took 58 per cent of the US market last year, compared with around 11 per cent in the UK. Now UK operators are promoting numeric paging which enables users to contact pagers using the telephone, and without going through the operator.

In high penetration markets such as Hong Kong almost all pagers are owned, and can be freely bought in retail outlets. In the UK 90 per cent of pagers are rented from one of seven national operators.

Lower charges and more accessible services may generate a new consumer market for paging. Two of the more ambitious plans are introducing pan-European services and two-way paging services.

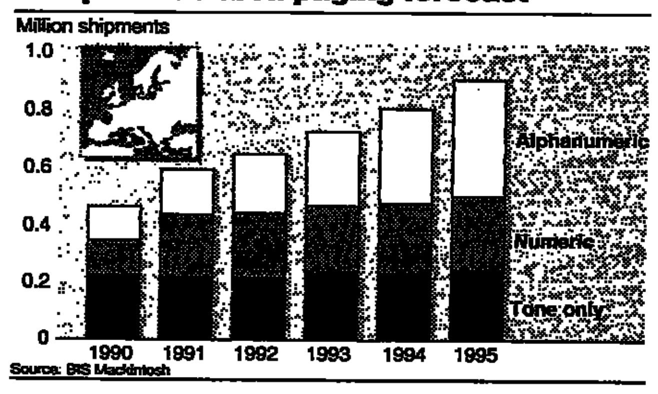
As a first step to pan-European paging, operators in the UK, France, Germany and Italy have created the Euromessage network operating on a common frequency. But the service has fewer than 2,000 users, which raises doubts about prospects for the true pan-European service called Ermes planned for 1993.

The prospects for two-way paging look equally uncertain.

Future pagers will need to be smaller, like Motorola's wristwatch pager or the credit card size pagers being developed in Japan. They must be easy to use and above all cheap.

The intention is to make the pager as commonplace in the office as the electronic calculator. If that happens, our lunchtimes may never be our own.

Europe: wide area paging forecast



Source: BIS Mackintosh

VOICE MESSAGING

Machines with the answer

IMAGINE BEING able to phone your local widget supplier and leave a message that you want to order 50 sprockets, whereupon a recorded voice responds that sprockets cost £2 each and are available directly from stock. It then asks if you want to confirm your order, after which it inquires whether you need a confirmation slip sent to you by facsimile.

Such a scenario is no mere pipe dream. Voice messaging, voice mail or voice processing technology, as it is variously called, is well on the way to providing the means to carry out the task.

Voice messaging systems – in their simplest form a sort of corporate answering machine where messages are recorded to be picked up by the recipient dialling a personal mailbox number – are largely of North American design. Companies which have pioneered developments of systems include Octel, AT&T, VMX, Northern Telecom and Centigram.

The aim of the manufacturers was to combat "telephone tag", where the frustrated caller is bombarded with the continuous ringing or engaged tone or ends up leaving a message that may never be answered. Statistics show that, in spite of all the latest mobile radio technology, up to 75 per cent of phone calls never get through to the right person.

Mr Nigel Southon, general manager of voice messaging for BT (formerly British Telecom) in the UK, compares voice messaging to a spoken memo – a replacement for the yellow bits of sticky paper on people's desks.

Although it is used widely in the US, only recently have companies in Europe really taken to voice messaging technology. Mr Paul Cheslaw, managing director in the UK of VMX, the US equipment manufacturer, points out that implementation of systems in the UK is running about three years behind the US, but that the UK is generally ahead of the rest of Europe.

The reason for the UK's lead is generally acknowledged to be because it was the first country in Europe to liberalise the provision of phone services and equipment. "The penetration of touch-tone telephones is quite large in the UK, and that is a pre-requisite for voice messaging – if people don't want to carry touch-pads around in their pockets the whole time," says Mr Mohan Chopra, general manager, business development for Europe for Centigram.

Despite that, Mr Cheslaw believes the trends in the US and UK are similar. Many large companies, he says, first begin to use voice messaging services through a bureau, run by the phone companies. This enables them to become accustomed to the technology by using a small number of mail boxes. Once they see the advantages, they often install their own equipment in their own offices.

For smaller companies, renting voice mailboxes from a bureau is usually the only feasible option. Ms Annie Brooking, managing director of the Technology Broker, with offices in California and London, believes voice messaging is one of the few satisfactory ways of doing business.

With fewer than 10 employees in the company, she says her staff need some way of keeping in touch with transatlantic clients. So she rents a mailbox on an American-based service where clients can leave messages for her. Then she rents further mailboxes for each of her larger clients so that she can leave messages for them. She may not see some clients for up to six months, she says, "but I speak to them every day".

Some larger organisations also use bureaux because they want to free themselves from the management responsibilities of an in-house system. Many large companies in the US opt for a combination of the two, buying equipment for their biggest offices and renting bureau services for their smaller regional offices. Bureau services can also "top up" their in-house systems if they run out of capacity.

But Mr Cheslaw believes on-site equipment can prove effective where more complicated processing tasks are required. These involve combining voice messaging with electronic mail and faxes. By providing a link between the computer system and the inhouse voice processing system, electronic mail – usually sent from one computer user to another – can be stored digitally in the recipient's mailbox.

When the recipient interrogates the messaging system, he (or she) will be told that he has, say, three voice and two electronic mail messages. He can listen to the voice-mail messages and then opt to have the electronic mail ones read to him, too. This is done by a digitised computer voice which "reads out" the messages.

The lastest technology can also go one step further, says Mr Chopra. Machines can store facsimile messages which can then be sent from the message store to a fax machine local to the recipient.

Della Bradshaw

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Andrew Jack looks at electronic access control systems

Cards that open doors

THE GLEAMING glass and metal of the Canary Wharf tower in London's Docklands conceals one of the most elaborate security systems outside the Pentagon. There are more than 2,300 security devices in the main 800ft tower and the streets around the complex.

"It was a major undertaking," says Mr Gary Schiff, president of Schiff and Associates, the security consultants based in Bastrop, Texas, which co-ordinated the installations. "We spent four years on the system. It is worth many millions of pounds."

A key element of the security plan is access control: ways to control who goes in and out. There are surveillance cameras, intercoms, doors and lifts activated by cards, and even old-fashioned security guards. As Mr Schiff says, it is about procedures as much as equipment: stopping and searching people if necessary.

There is nothing new about access control. Mechanical keys and guards demanding passwords to let people enter sensitive areas are both long-standing examples. Digital keypads and magnetic cards are among the more recent innovations.

Some of the most quirky high-technology versions in top security sites border on science fiction: "biometric" devices that recognise people by analysing their fingerprint or palm; the voice or signature; and even the pattern of blood vessels in the retina.

However, across Europe mechanical security locks still dominate, according to a survey commissioned by Frost & Sullivan, the market research company. Buoyed by demand from residential households, they accounted for 64 per cent of the total estimated 1989 revenues of $2.05bn.

Close circuit television and entryphones, and electronic tokens rank next, at $318m (16 per cent of the market) and $281m (14 per cent) respectively. Far more minor contributions come from identity cards (4 per cent), electronic keypads (2 per cent) and biometric systems (0.3 per cent), although the latter, starting from a small base, are projected to grow most rapidly in the next few years.

Mr Alan Woodley, of Aztec Business Systems, who wrote the survey, says that many companies still buy security systems only because they are forced to by external pressures: by their insurance companies, or by the Ministry of Defence if they are defence contractors. "It is fairly unusual for companies to do it off their own bat."

During the recession, he says, security is often among the first items on the corporate budget to suffer: no-one wants to install systems which offer no obvious productivity gains or financial returns.

Nevertheless, security is becoming much more part of architectural design. "In the past, buildings were very much more open," says Mr Schiff. "The way things are going, card access will be the standard, not the exception, soon for state-of-the-art buildings."

By working with the designers right from the start at Canary Wharf, he says it was possible to install special conduits for extra wiring. Equipment could be matched to the decor and lay-out, rather using costly "retro-fitting" once all other elements of construction were complete.

Schiff and Associates tried to minimise the number of entrances and exits to each building and area on the Docklands site. That allowed it to use automated equipment extensively, relying on guards in a few strategic areas.

There is a guard at the entrance hall in every building. During the day, access is fairly free, with cards in the lifts. Outside working hours, the guard remains, but the main doors require cards for access into the reception area. The cards in the lifts also prevent anyone left in from wandering freely around other offices.

Most of the access cards used on the development are the Wiegand type: a plastic card with special magnetic coils inside containing unique patterns, which are extremely difficult to forge or accidentally damage.

"Proximity cards" – which do not have to be swiped through a reader, but simply held near it – are also in use. "The choice depends on the philosophy of the user," says Mr Richard Jerome, managing director of CMR, a contractor for security systems at the site.

They are more expensive than magnetic or Wiegand cards, but are also more durable, since they do not require physical contact with a reader. That makes them ideal for anyone with their hands full: one reason the company has installed them at the Old Bailey in London, where lawyers and officials bustle in and out, balancing piles of documents in their arms.

While access control systems provide security to stop people coming in, companies are increasingly concerned to prevent things from going out. "Laptop computers slide out very easily," says Mr Schiff. "A lot of security concerns are internal ones now." The other main worry driving demand for greater corporate security, he believes, comes from the risks of theft and vandalism in parking garages.

Ms Jonna Jeffis, associate editor of Access Control, a specialist US journal, agrees. "Security is mainly motivated by a concern about theft – from inside the company as well as outside," she says.

She also stresses that in the 1990s, it is as important to protect information as property. Computer access and security has thus begun to gain increasing attention, with an emphasis on passwords, encryption techniques and keys or cards which have to be used before any data can be obtained.

There remains a critical ethical issue with most modern access control systems, since they specifically identify the individuals entering and leaving an area. Some organisations have used them as a secret way to monitor employees' hours without the need for time cards: a point that has caused concern among unions.

Wendy Smith discovers some solutions

Cable problems mount up

INSTALLING electronic equipment in an ageing building can be a nightmare. But as more and more older properties are architecturally recycled for office use, and high-tech equipment is installed into essentially low-tech structures, the problems of cabling and overheating mount up. How can they be solved?

In the current recession, with a slowdown in the office building market, more UK companies need to adapt existing office stock rather than commission state-of-the-art custom premises. Much of that stock was erected in the boom building years of the 1960s and 1970s – and designed for the technology of that time. Future technological needs will not have been taken into account.

Mr Derek Amos, a partner in architectural practice TTSP, says the 1960s buildings were simple in design. "The floors were concrete, offices were 40 to 42 ft wide with a standard central corridor. They were designed for people to work in but not for miles of cables and tons of electronic equipment."

Computer equipment has reduced in size in recent years. Giant number crunchers housed in their own specially serviced rooms have been replaced by the smaller personal computer and accompanying electronic gadgetry, which can be found on most office workers' desks. But all of this equipment needs cabling and networking to other parts of the building. The miles of wiring and extra heat generated by the technology give headaches to office designers working with older building stock.

In the 1960s and 1970s, the boom-time developers in the City of London circumvented height restrictions on new blocks by cramming in as many floors as possible to ensure a return on investment. But Mr Amos states that his clients have found problems accommodating their equipment not just in those offices but, more surprisingly, in the buildings of the 1980s.

The floor heights and the "risers", which take services, were simply of insufficient height and space to accommodate the extra cabling and services such as air-conditioning that are essential to facilitate electronic equipment.

To create the necessary horizontal voids for the cabling and ducting into the building, TTSP once had to strip off the cladding from the outside of the building and hang a new glass curtain wall 0.5m out.

The brief was to create a building that would act as a headquarters taking in networked PCs, a large switchboard and extensive building services systems. The floors had to be raised and the ceiling lowered to accommodate the cabling and air-conditioning within the building, and a disused lift shaft commandeered as a service riser.

But it is not just those cables required for today that will cause problems: it may well be those that have been left behind. Every time a computer system is changed, the previous cables will have been left behind, resulting in an underfloor layering.

Mr Kevin Carter, of IT consultancy Profundus, is secretary of the Intelligent Building Group. He recalls the problems encountered by one client who had five buildings with risers clogged up with unused cables and floors layered with several generations of cabling. To continue working, contractors had to be brought in and it cost £186,000 to remove the redundant cabling to allow the firm to lay its own.

The introduction of open systems has brought welcome standardisation so that people can now structure their cabling in the office. Meanwhile much interest is being paid to the development of Clans (cordless local area networks). These require a network interface card and an antenna with additional encryption equipment (which unscrambles codes) necessary for a secure environment. But, as yet, their applications are limited and the cableless office is not yet around the corner.

"Cabling will be with us for a while longer," maintains Mr Peter Massey of the Aspen consultancy. "The trend is for cabling to get physically smaller but the quantity is going up."

Mr Carter of Profundus believes that much older buildings are in many cases easier to fit out with high-tech equipment than the office stock of the 1960s and 1970s. "If you take, say, a building from the turn of the century the space would be less deep because they relied much more on natural light due to paucity of artificial lighting. People had to work nearer the windows for daylight and the ceiling would be higher to accommodate greater window space.

"These buildings are excellent for conversion as they lessen the need for a raised floor. The cabling can be concealed within perimeter trunking and the high ceiling can secrete away any required heating and ventilation ductwork."

Older buildings, maintains Mr Carter, can have more than generous vertical risers that were once used to carry rudimentary central heating pipes. But problems arise with the establishment of the riser cupboard needed to house essential cable connecting technology, which must be accessible for maintenance purposes.

According to the standard figure relied upon by building service engineers, the heat given out by small equipment such as PCs, printers and modems is around 25 watts. But Mr Frank Simmons of consultant engineers Tilney Simmons warns that it is possible to encounter heat loads of up to 60 watts per square metre.

"Estimating the amount of heat distribution is a critical factor," he explains. "You have to know how much power will enter the building as this in turn will be converted to heat, which is removed by air-conditioning. Many companies make the mistake of overestimating which can prove costly in terms of air-conditioning and the electricity tariff."

HEATING

Aim is to waste less energy

HIGH TECHNOLOGY may have taken over modern offices, but it has also been working its way into the design of the buildings in which they are housed. No large office block these days is complete without some form of computerised "building management" system. Such systems are designed to allow control of heating, ventilation and air-conditioning, as they monitor energy consumption throughout the building.

The idea is that with precise control of the environment in each room in the building, the office will be a more pleasant place to work, less energy will be wasted on rooms which do not need heating or air-conditioning and the ventilation systems can be managed so that its occupants do not suffer from "sick building syndrome".

If the ventilation is poor, for example, airborne diseases – notably Legionnaire's Disease – may be given a chance to spread. There are also circumstances where the individual rooms in a commercial building may need special attention. Take a hotel, for example, particularly one with heavy seasonal fluctuations in its business. The Dusseldorf Hilton, where Mr Manfred Stoecklein is manager, is looking closely at a computerised energy management system.

Mr Stoecklein would like to be able to stop heating unoccupied rooms and ensure that those occupied by guests are always comfortable. Although the hotel is only 22 years old, it is difficult to find a ready-made system which would manage the hotel's rooms properly.

"In principle, such a system would be used to reduce and control energy costs such as air-conditioning and electricity consumption – which is all done manually at the moment," he explains. "As for heating, at the moment all the rooms are heated all the time – we set it to a certain number of degrees each day depending on the outside temperature. If that fluctuates greatly, someone has to go around with a thermometer to test the system – that is certainly a waste of time."

Mr Stoecklein's biggest problem is in the summer holiday season, when the hotel – mainly designed for business travellers to northern Germany – is at 50 per cent occupancy. The current system requires him to air-condition rooms that have no guests.

It is not only new commercial buildings and offices that use building management systems. At The Brewery – corporate headquarters of the Whitbread brewing company since 1742 – a new Honeywell Excel T management system has been installed to handle the kind of challenges posed by an older office building.

These challenges are enhanced by the fact that Whitbread's Chiswell Street facility also comprises a corporate conference and banqueting centre which is hired out for events ranging from dinner dances to dog shows. There is also little consistency in the nature of the building's rooms. For example, one of the function rooms can get very cold when empty – but quickly gets too hot when a capacity crowd of more than 1,000 fill it.

The famous Whitbread shire horses also live near the site, as they deliver beer to nearby pubs. The building management system extends to managing and maintaining the hot air blowers used to keep the horses warm. And as one of the major public appearances made by the horses every year is at the Lord Mayor's Show – when they pull the Speaker's coach – that coach is also kept at the Brewery in a glass case, the temperature and humidity of which is also controlled by the Honeywell Excel T system.

But according to Mr Walter Menteth, a London architect, not all building management systems are as sophisticated. "They are as up-to-date as the costs (for design of the building) will allow," he says. He warns that many systems still offer large margins for error and are not responsive enough to changes in conditions – so that the wrong levels of lighting give people headaches, while stale air from a poorly-controlled air-conditioning systems causes colds.

Geoff Wheelwright

The new heights of technology

Lifts that know

THE SLUMP in the property market has not pushed the UK lift industry right down the shaft. But many small companies have been squeezed out by the ripple effect of multiple

claustrophobic.

But a lift must, above all, match the expected requirements of a building, present and future. This is immensely difficult in the case of speculative buildings – the majority
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Laura Blair

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Even "intelligent buildings", using computer-controlled lighting management systems, are not free of the problem. The lights may switch themselves on and off in response to daylight levels but, where the lighting is provided by conventional ceiling lights, they still cannot cope when people sitting virtually side by side need they would produce adverse customer reaction.

Thus, shop premises have long made use of the lighting track (busbar) approach, solid copper rods instead of the usual coated cables, so lights can be easily plugged in along their length. They are easy and quick to install and make moving the light fittings themselves and combining different ment system but which is easy to move because there is no need to rewire. It contains two 40W compact fluorescent lamps operating off a controllable high frequency ballast – plus a photoelectronic cell and an infra-red sensor. Thus, it can provide daylight compensation, and it switches itself on or off if the room is unoccupied.

The problem of providing dif-

is full-spectrum fluorescent lamps which simulate daylight. They are used in places where exact colour matching is crucial, but are also a good idea in general offices because it is less tiring to work with them. The only drawback is that they cost twice as much as conventional fluorescent tubes.

Laura Blair

OFFICE TECHNOLOGY 8

Diane Summers looks at the EC directive

Safety at the screen

THE FIRST wave of office technology was, in many organisations, simply superimposed on the old environment. A bit of space was cleared on the desk for a visual display unit but everything else remained much the same – chairs, desks, lighting, the organisation of the job itself, changed little from the old pencil, paper and typewriter days.

Since then, some organisations have, quite literally, learnt a painful lesson as staff have begun to complain of neck, shoulder, arm and hand disorders. Extreme cases have led to long periods of disability and some substantial out-of-court financial settlements.

Repetitive strain injury (RSI) – as it is commonly if misleadingly known – now accounts for more than half of all work-related injuries reported in the US. Australia has suffered from RSI in almost epidemic proportions. The phenomenon is on the increase among UK white-collar workers; not just high-volume data entry workers, but also secretarial staff, lighter computer users and professionals are affected. The Financial Times itself has a number of long-term RSI cases among its journalists.

Disorders range from conditions with clinical names, such as tenosynovitis and capsulitis, to less clearly defined damage to nerve tissue. Poor equipment, environment and posture can lead to muscles being starved of oxygen, the build-up of waste products and the compression of nerves. Serious sufferers have found their personal as well as working lives blighted by the condition.

These problems, or the wish to avoid them, have led many employers to reorganise their office environments; others have taken the opportunity to re-equip on changing locations. For the rest, who may still have VDUs perched among Dickensian clutter, there will soon be another powerful reason for a clean sweep: a European Community directive which will become part of UK domestic legislation by the end of next year.

Some less scrupulous suppliers may be attempting to take advantage of the fear and confusion that the words "EC directive" will engender in many an employer's mind. It is important, therefore, that those responsible for health and safety, office organisation and the purchase of equipment, understand the scope of the directive and what it does – and does not – specify.

The first thing to be aware of is the timing of the new provisions: UK law will be amended, probably by new regulations under the Health and Safety Act 1974 and the publication by *the Health and Safety Executive* of detailed guidance, by the end of next year.

New workstations after that date will have to comply with the new rules but there will be a further four years' grace for employers to update or replace existing equipment where necessary.

The directive relates to "display screen equipment" but excludes, for example, computer systems in public use such as cash machines in banks, as well as calculators, typewriters and lap-top computers not in prolonged use. It covers all elements of the workstation – including modems, printers, chairs, desks and the "immediate work environment" – in other words, not just screens and keyboards.

The details of the provisions are contained in an annex to the directive. The main points cover:

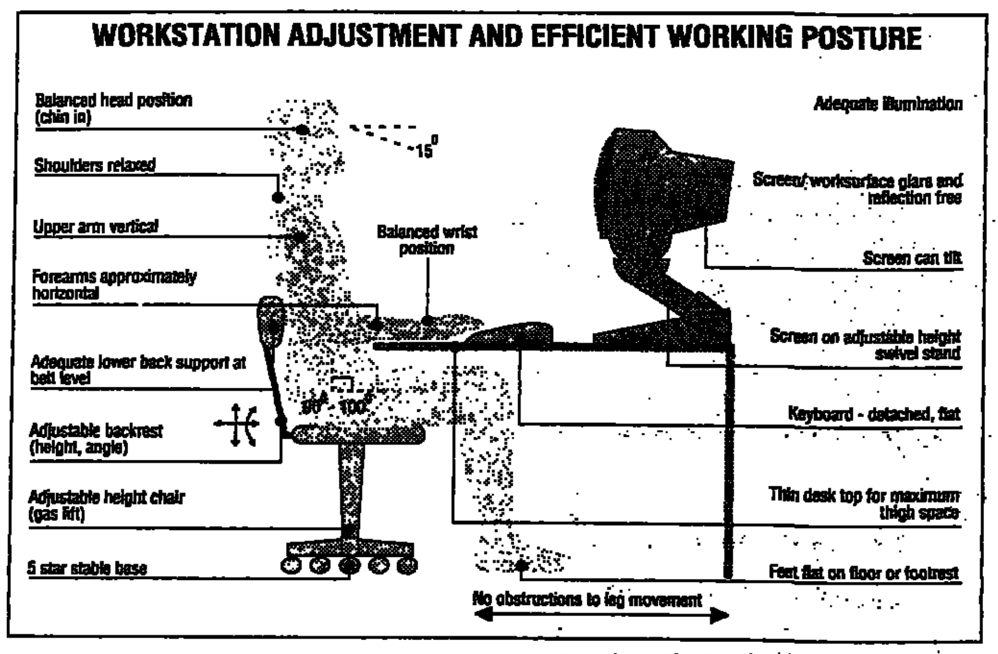
- **Display screens** which have to be clear with no flicker and free from glare. They must also be able to swivel and tilt easily.
- **Keyboards** must not cause glare, and also have to be tiltable and separate from screens. The surface in front of keyboards must be large enough to allow operators to rest their arms and hands on them.
- *Desks will have to be large* enough to allow "flexible arrangement of the screen, keyboard, documents and related equipment". They will also have to have a surface that does not cause glare.
- *Chairs* will have to be easily adjustable in height and the back will have to be adjustable both in height and tilt. Footrests will have to be provided for operators who want them.
- **Lighting** will need to ensure *"appropriate contrast"* between the screen and the background environment. Glare and reflection must be avoided in the way workstations are designed and positioned, and windows must have blinds, or similar.
- **Noise** made by equipment belonging to workstations will have to be taken into account at the design stage so that it does not "distract attention or disturb speech".
- **Heat** produced by equipment should not cause discomfort to workers and "adequate" levels of humidity will have to be established and maintained.
- **Radiation** will have to be reduced to "negligible levels from the point of view of the protection of workers' safety and health".

Employers will be responsible for evaluations of workstations to ensure that they do not pose a health and safety risk. They will need to organise work so that screen work is "periodically interrupted by breaks or changes of activity," consult with employees about health and safety measures, as well as train them in the proper use of equipment.

Free eyesight testing and any special glasses needed for screen work will have to be provided – a measure that will incur some expense for employers now that charges for eye tests are made under the National Health Service. Bulk testing at discount is already being promoted by some opticians.

Nowhere, it should be noted, does the directive specify measurements for desks or chairs, for example, though plenty of separate British Standard guidance on these issues is available. Nor does the directive say that screen filters must be used or oblige employers to purchase complicated contraptions for supporting operators' arms.

Employers should beware of persuasive sales pitches and should ask themselves whether some of the more esoteric items are really necessary or are simply being purchased as an alternative to tackling fundamental issues such as poor lighting or positioning of equipment.



The recommended way of sitting at a visual display unit and positioning the equipment

FACILITIES MANAGEMENT

The scope is broadened

MANY COMPANIES have handed over office cleaning and company catering to outside firms. But should they also get third party companies to run the office printing, or even the computer systems?

The answer will vary according to business priorities. Frost & Sullivan, the research consultancy, says companies should consider contracting out activities with the lowest strategic importance and the highest level of maturity.

They must ask how each activity affects their competitive strength in their main markets. Those which are unique to the company or based on company-specific skills provide competitive advantage and should be kept in house.

However, if an activity is mature, then outside suppliers can probably manage it well and at lower cost. For example, BT, the UK telecoms carrier, has not lost any advantage from closing its inhouse printing department or contracting out staff catering.

The situation is more complex when it comes to contracting out computer services, *mainly because this is a less* mature area, which many companies see as vital to maintaining a competitive edge.

However, many aspects of computing services are relatively straightforward and lend themselves to the facilities management approach.

Mr Henry Trull, of research company IDC, says that in the past two years, UK companies have become more receptive to the idea of contracting out the running of their computers.

In fact, computer facilities management (FM) is now one of the fastest growing areas of the computer industry. IDC predicts that the annual value of UK FM contracts, worth £310m ($527m) last year, will grow at 20 per cent until 1993.

Mr Trull says the biggest single factor encouraging the use of FM is that recession has forced companies to concentrate on their core businesses. Other factors leading to the growth of FM are:

- Dissatisfaction with information technology (IT) departments. The inefficiency of many, because of maintenance backlogs or lack of business focus, can make FM seem attractive.
- Technology confusion. Mr Trull says companies are confused about how to move from the technology they use today to new *technologies such as* open systems. They cannot always afford to employ staff with all the expertise they need. FM companies can usually provide staff with a broader range of skills.
- *Cost savings. IDC says more* users now believe that FM can not only give better value for money but also more control over costs through a fixed price contract. London Buses believes it has saved money by opting for a three-year FM contract with Hoskyns. Mr Rodney Pangbourne, its finance director, says that although London Buses will spend roughly the same amount on FM as it spent on inhouse IT last year, costs could fall slightly over the life of the contract.

Desktop FM. In 1990 over 50 per cent of UK users of computer FM used it for processing. But IDC thinks FM will become a more value-added service, with suppliers building strategic partnerships with their customers and selling everything from IT planning to software maintenance.

Other types of facilities management, such as desktop FM, are also becoming more common. For example, Unilever has handed over PC management at its London head office to UK computer dealer P&P.

Managed networks. Another growth area is facilities management for the large corporate networks which link computers in different national and international offices.

Pitfalls. Despite the benefits, risks are involved in FM. For *example*, unless the level of service user companies require is spelt out in the contract, it may be hard to get compensation for poor performance.

For those wary of FM who want to take some hassles out *of running* a computer centre, Telehouse, a £30m Anglo-Japanese computer and telecoms centre in London's Docklands, offers a halfway house. Typical customers run their own computers, but Telehouse manages central services such as BT and Mercury links, spare generators and air-conditioning.

Jola Shillingford

OFFICE FURNITURE

Test of nerve for UK companies

OFFICE WORKING practice is entering a new age of enlightenment in the 1990s as companies recognise that simply filling every available office space is neither sensible nor truly efficient.

Managers have all read press stories about litigious secretaries winning substantial payments from employers because of work-related injuries and illnesses – and discovered that a real price can be put on neglect in the office environment. According to a survey commissioned by Office Furniture Systems, which culled its research from the UK, US and Germany, the annual cost per *employee in terms of lost pro*ductivity from poor office conditions is as high as £5,500.

Creating the right working environment is therefore high on the management agenda, along with the need to project corporate image. In this context, choice of appropriate office furniture becomes more important for British firms which wish to keep specialist office-based staff. After all, corporate image and corporate care embrace office desk and chair, as well as company car and private health insurance.

Economic recession means that the market is severely depressed. "It is down as much as 30 per cent," estimates Mr John Sacks, chairman of the office furniture division of the Electronic Equipment Association. However, overseas manufacturers remain keen to establish themselves in the UK.

For example, Dutch systems furniture manufacturer Samas has paid £63m for British firm Vickers (with 10 per cent UK market share) and its French counterpart Ergam Roneo. Italian giant Olivetti Synthesis has signalled its intention to boost its UK position by opening a West End showroom.

So why all this interest in a shrinking and, some would say, saturated UK office furniture market? Mr Paul How of Asher Systems Furniture believes that, though the UK is fourth in market size for systems furniture behind Germany, France and Italy, it is seen by Europeans as a potential growth market and by the US as a bridge to Europe.

Amid the rationalisations and acquisitions, there have been the inevitable British casualties. Desking Systems went into receivership recently, along with Mines and West. Magpie is in the throes of a management buyout, and Scott Howard, a well-established distributor, came to grief after attempting to get into manufacturing.

Despite the financial malaise, manufacturers have been pushing out new systems furniture products with a keen eye on the new Europe of the 1990s. "The benchmarks that people want from systems furniture have changed dramatically in recent years," says Mr Adrian Stokes, a designer.

Many companies have also had to customise their products for the European market. North America's standard modular panel-based systems have enjoyed success in the UK, but the Europeans have a marked preference for a more open landscaped office layout using more free-standing furniture and lower screens.

British office furniture manufacturers have faced not only fierce competition from well-resourced overseas rivals, but a marked reluctance by UK architects and specifiers to use their products in more stylish interiors. Made in Britain has the wrong connotations in a market which attaches great importance to design and architectural sensibilities.

This year, however, has seen an upscaling of activity as British furniture manufacturers have shown a surprising amount of pluck, investing a great deal of capital in an attempt to meet the challenge.

The most notable of these British launches was the FX range in June by Project Office Furniture. Taking a leaf out of the book of its overseas competitors, Project went to an independent design consultant – Ben Fether of FM Design – for its new £3.5m range so that its design and manufacturing would have more credibility with the professional specifier.

Mr Sacks believes that indigenous manufacturers have got their act together to improve quality, meet standards and cut delivery dates.

But with the office sector still gripped by recession, UK manufacturers face a long test of nerve as the multinationals with their vast reserves and ability to pool research and development remain favourites to weather the storm.

Wendy Smith